

Material	Temperature	Strain Rate	Stress	Strain	Modulus	Yield Strength	Tensile Strength	Elongation	Reduction of Area	Fracture Mode
Aluminum	77 K	0.001 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	0.01 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	0.1 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	1 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	10 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	100 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	1000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	10000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	100000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	1000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	10000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	100000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	1000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	10000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	100000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	1000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	10000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	100000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	1000000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	10000000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	100000000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	1000000000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	10000000000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	100000000000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	1000000000000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	10000000000000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	100000000000000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	1000000000000000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	10000000000000000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	100000000000000000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	1000000000000000000000000000 s ⁻¹	100 MPa	0.01	70 GPa	100 MPa	150 MPa	10%	50%	Brittle
Aluminum	77 K	100000								

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	

[illegible][illegible]

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

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<211> 154
<212> PRT
<213> B.fragilis
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Val	Met	Lys	Val	Tyr	Leu	Gly	Leu	Gly	Thr	Asn	Leu	Gly	Asp	Lys	Glu
1				5					10					15	
Leu	Asn	Leu	Arg	Val	Ala	Leu	Gln	Lys	Ile	Glu	Glu	Arg	Ile	Gly	Lys
			20					25					30		
Ile	Ile	Ser	Leu	Ser	Ala	Phe	Tyr	Ala	Thr	Ala	Pro	Trp	Gly	Phe	Gln
		35					40					45			
Ser	Glu	Asn	Asn	Phe	Leu	Asn	Ala	Ala	Val	Gly	Val	Glu	Thr	Val	Leu
	50					55					60				

Ser Pro Val Gly Ile Leu Glu Ser Thr Gln Arg Ile Glu Gln Glu Ile
 65 70 75 80
 Gly Arg Leu His Lys Ser Arg Asp Gly Val Tyr Ser Asp Arg Leu Ile
 85 90 95
 Asp Ile Asp Leu Leu Tyr Gly Asp Lys Ile Leu Gln Asp Glu Arg
 100 105 110
 Leu Ile Val Pro His Pro Leu Met Thr Asp Arg Lys Phe Val Leu Glu
 115 120 125
 Pro Leu Ala Glu Ile Ala Gln Asp Val Val His Pro Val Phe His Lys
 130 135 140
 Thr Ile Lys Glu Leu Phe Leu Ala Leu Ser
 145 150

<210> 6362

<211> 311

<212> PRT

<213> B.fragilis

<400> 6362

Arg Phe Gly Val His Leu Asn Met Gln Ile Lys Pro Met Asn Lys Leu
 1 5 10 15
 Thr Ile Asn Ala Cys Pro Leu Cys Gly Gly Ala His Leu Lys Arg Ala
 20 25 30
 Met Thr Cys Thr Asp Phe Tyr Ala Ser Gly Glu Gln Phe Asp Leu Tyr
 35 40 45
 Thr Cys Glu Asp Cys Gly Phe Thr Phe Thr Gln Gly Val Pro Val Glu
 50 55 60
 Ala Glu Ile Gly Arg Tyr Tyr Glu Thr Pro Asp Tyr Ile Ser His Ser
 65 70 75 80
 Asp Thr Lys Lys Gly Ala Met Asn Ala Ile Tyr His His Val Arg Gln
 85 90 95
 Tyr Met Leu Gly Arg Lys Ala Arg Leu Val Met Lys Glu Ser His Arg
 100 105 110
 Lys Thr Gly Arg Ile Leu Asp Ile Gly Thr Gly Thr Gly Tyr Phe Ala
 115 120 125
 His Thr Met Gln Asn Arg Gly Trp Glu Val Glu Ala Val Glu Lys Ser
 130 135 140
 Gly Gln Ala Arg Asn Phe Ala Arg Glu His Phe Gly Leu Asn Val Arg
 145 150 155 160
 Pro Glu Ala Ala Leu Lys Glu Leu Val Pro Gly Thr Phe Asp Val Ile
 165 170 175
 Thr Leu Trp His Val Met Glu His Leu Glu His Leu Asp Glu Thr Trp
 180 185 190
 Glu Leu Leu Arg Glu Leu Leu Thr Glu Lys Gly Val Leu Ile Val Ala
 195 200 205
 Val Pro Asn Cys Ser Ser Tyr Asp Ala Met Lys Tyr Gly Lys Tyr Trp
 210 215 220
 Ala Ala Tyr Asp Val Pro Arg His Leu Trp His Phe Thr Pro Ala Thr
 225 230 235 240
 Ile Gln Gln Phe Gly Ser Lys His Gly Phe Ile Leu Ala Ala Arg His
 245 250 255
 Pro Met Pro Phe Asp Ala Phe Tyr Val Ser Met Leu Thr Glu Lys His
 260 265 270
 Lys Gly Ser Ala Tyr Ser Phe Val Lys Gly Met Trp Thr Gly Thr Val
 275 280 285
 Ala Trp Leu Ser Ala Gln Ala Lys Lys Glu Arg Ser Ser Ser Met Ile
 290 295 300
 Tyr Val Phe Arg Lys Lys Arg
 305 310

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<400> 6363

Trp	Val	Met	Ser	Val	Phe	Cys	Leu	Gln	Glu	Thr	Cys	Phe	Leu	Gln	Thr
1				5					10					15	
Lys	Asp	Tyr	Met	Asp	Asn	Ser	Ser	Lys	Gln	Asn	Ile	His	Arg	Glu	Lys
			20					25					30		
His	Leu	Val	Phe	Ser	Phe	Thr	His	Arg	Tyr	Ile	Leu	Asn	Ile	Thr	Phe
		35				40						45			
Gly	Arg	His	Pro	Leu	Gly	Ser	Thr	Val	Ile	Pro	Asp	Thr	Leu	Lys	Ala
	50					55					60				
Tyr	Thr	Asp	Ile	Met	Ser	Ala	Ile	Gln	Thr	Arg	His	Ile			
65					70					75					

<210> 6364
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 <212> PRT
 <213> B.fragilis

<400> 6364

Asn	Lys	Asn	Thr	Met	Tyr	Thr	Ile	Gln	Ala	Asn	Pro	Ser	Gly	Thr	Arg
1				5					10					15	
Ser	Met	Glu	Ile	Ser	Glu	Glu	Asn	Leu	Val	Thr	Ile	Glu	Lys	Tyr	Ser
			20				25						30		
Leu	Phe	Gln	His	Leu	Ile	Asp	Ser	Asn	Gly	Ile	Val	Asp	Glu	Ala	Val
		35				40						45			
Leu	Glu	Lys	Leu	Lys	Leu	Asn	Ile	Arg	Ser	Leu	Ile	Ala	Ser	Gln	Glu
	50					55					60				
Glu	Asp	Ser	Lys	Asp	Leu	Leu	Asp	Leu	Cys	Ile	Asp	Val	Ile	Tyr	His
65				70					75					80	
Asn	Asn	Met	Lys	Ala	Phe	Gly	Leu	Gln	Gln	Leu	Ile	Lys	Leu	Tyr	Leu
			85					90						95	
Thr	Trp	Leu	Ser	Lys	Gln	Glu	Ala	Glu	Glu	Glu	Glu	Glu	Ala		
		100						105					110		

<210> 6365
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 <212> PRT
 <213> B.fragilis

<400> 6365

Ser	Phe	Val	Ala	Tyr	Tyr	Met	Asn	Gln	Phe	Tyr	Ile	Ile	Met	Lys	Ala
1				5					10					15	
Lys	Met	Phe	Phe	Leu	Val	Val	Ala	Met	Leu	Leu	Cys	Arg	Gly	Val	Ala
			20					25					30		
Tyr	Ala	Tyr	Ser	Pro	Ser	Ala	Asn	Asp	Pro	Ile	Ser	Lys	Ser	Gly	Gly
		35				40						45			
Ile	Glu	Gln	Asp	Ile	Pro	Pro	His	Ile	Pro	Pro	Pro	Pro	Pro	Leu	Pro
	50					55					60				
Ser	Gln	Ile	Phe	Leu	His	Val	Gly	Glu	Ile	Ser	Glu	Thr	Pro	Tyr	Pro
65				70					75					80	
Met	Ile	Gly	Ala	Met	Val	Trp	Glu	Cys	Asp	Asn	Pro	Pro	Val	Gly	Ile
			85					90						95	
Glu	Gln	Glu	Glu	Ser	Tyr	Ile	Phe	Gly	Thr	Met	Ile	Ile	Leu	Arg	Ile
			100					105					110		

Lys Gly Val Ala Ala Gly Arg Tyr Gln Val Asp Met Lys Trp Tyr Asn
 115 120 125
 Pro Leu Asn Pro Gly Gln Pro Pro Leu Gly Arg Gln Thr Ile Glu Val
 130 135 140
 Ile Val Gln Pro Trp Pro
 145 150

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 <212> PRT
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<400> 6366
 Gly Val Ala Leu Pro Cys Gly Trp Leu His Pro Ile Ser Val Pro Ser
 1 5 10 15
 Gln Thr Thr Gly Gln Pro Asp Arg Gln Ser Thr Asp Leu Phe Asn Tyr
 20 25 30
 Phe Lys Phe Ile Thr Gln Asn Gln Arg Lys Ser Leu Ser Leu Pro Lys
 35 40 45
 Ile Phe Ser Ile Tyr Ser His Lys Thr Phe Gly Ile Met Ala Lys Arg
 50 55 60
 Arg Glu Leu Lys Lys Asn Val Asn Tyr Ile Ala Gly Glu Leu Phe Ser
 65 70 75 80
 Glu Cys Leu Ile Asn Ser Lys Phe Ile Pro Gly Thr Asp Lys Lys Lys
 85 90 95
 Ala Asp Glu Leu Met Val Glu Ile Met Lys Met Gln Asp Glu Phe Ile
 100 105 110
 Ser Arg Ile Ser His Thr Glu Pro Gly Asn Val Lys Gly Phe Tyr Lys
 115 120 125
 Lys Phe Arg Ser Asp Phe Asn Ala Lys Val Asn Glu Ile Ile Asp Ala
 130 135 140
 Ile Ala Lys Leu Asn
 145

<210> 6367
 <211> 746
 <212> PRT
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<400> 6367
 Ile Cys Ser Asn Ile His Asn Asn Thr Ile Met Lys Lys His Leu Ser
 1 5 10 15
 Leu Ile Leu Val Leu Leu Pro Val Leu Phe Leu Ala Leu Pro Ala Leu
 20 25 30
 Ala Gln Glu Arg Lys Lys Val Gly Val Val Leu Ser Gly Gly Gly Ala
 35 40 45
 Lys Gly Val Ala His Ile Gln Ala Leu Lys Val Ile Glu Glu Ala Gly
 50 55 60
 Ile Pro Ile Asp Tyr Ile Val Gly Thr Ser Met Gly Ser Ile Ile Gly
 65 70 75 80
 Gly Leu Tyr Ser Ile Gly Tyr Thr Pro Gln Gln Leu Asp Ser Met Val
 85 90 95
 Arg Lys Gln Asp Trp Met Phe Leu Leu Ser Asp Arg Val Lys Arg Ser
 100 105 110
 Ala Met Ser Leu Asn Glu Arg Glu Lys Ser Glu Lys Tyr Val Phe Ser
 115 120 125
 Phe Pro Phe Thr Lys Ser Pro Lys Asp Ala Val Ser Gly Gly Ile Ile
 130 135 140
 Lys Gly Gln Asn Leu Ala Asn Leu Phe Thr Glu Leu Thr Val Gly Tyr

145	150	155	160
His Asp Ser Val	Asp Phe Asn Lys Leu	Pro Ile Pro Phe Ala Cys Val	
	165	170	175
Ser Gln Asn Ile Val	Asn Gly Glu Gln Ile Val	Phe His Asn Gly Ile	
	180	185	190
Leu Ala Thr Ala Met Arg Ala	Ser Met Ala Ile Pro	Gly Val Phe Thr	
	195	200	205
Pro Val Arg Lys Asp Ser Met	Ile Leu Ile Asp	Gly Gly Met Ile Asn	
	210	215	220
Asn Tyr Pro Val Asp Val Ala Arg Ser Met	Gly Ala Asp Ile Ile Ile		
	225	230	235
Gly Val Asp Val Gln Asn Asn Leu Lys	Gly Ile Asp Lys Leu Asn Ser		
	245	250	255
Ala Pro Asp Ile Leu Ser Gln Ile Ile	Asp Leu Thr Thr Lys Asn Asn		
	260	265	270
His Gln Ser Asn Val Gly Leu Thr Asp Thr Tyr Ile	Lys Val Asn Val		
	275	280	285
Glu Gly Tyr Ser Ser Ala Ser Phe Thr Pro Ala Ala	Ile Asp Ser Leu		
	290	295	300
Met His Arg Gly Glu Val Ala Ala Arg Lys Gln Trp Ala Ser Leu Leu			
	305	310	315
Ala Leu Lys Lys Lys Ile Gly Ile Ala Asp Thr Phe Val Pro Gln Ser			
	325	330	335
His Gly Pro Tyr Thr Met Phe Ser Lys Asp Arg Thr Leu His Val Lys			
	340	345	350
Glu Ile Thr Phe Ser Asp Val Glu Glu Asn Asp Lys Lys Trp Leu Met			
	355	360	365
Lys Lys Cys Lys Leu Gln Glu Asn Ser Arg Ile Ser Met Arg Gln Ile			
	370	375	380
Glu Gln Ala Leu Phe Ile Leu Arg Gly Asn Gln Ser Tyr Ser Asn Ala			
	385	390	395
Ser Tyr Thr Leu Thr Asp Thr Pro Glu Gly Tyr Lys Leu Asn Phe Leu			
	405	410	415
Leu Glu Lys Lys Tyr Glu Lys Thr Ile Asn Val Gly Ile Arg Phe Asp			
	420	425	430
Ser Glu Glu Ile Ala Ser Leu Leu Ile Asn Ala Thr Ala Gln Leu Lys			
	435	440	445
Thr His Ile Pro Ser Lys Val Ser Val Thr Gly Arg Leu Gly Lys Arg			
	450	455	460
Tyr Met Ala Arg Val Asp Tyr Thr Leu Glu Pro Met Gln Gln Arg Asn			
	465	470	475
Val Asn Phe Ser Tyr Met Phe Gln Tyr Asn Asp Ile Asn Ile Tyr Asp			
	485	490	495
His Gly Asp Arg Ala Tyr Asn Thr Thr Tyr Lys Tyr His Ser Gly Glu			
	500	505	510
Phe Gly Phe Ser Asp Val Trp Tyr Lys Asn Phe Arg Phe Gly Phe Gly			
	515	520	525
Ala Arg Ile Glu Tyr Phe Lys Tyr Lys Asp Phe Leu Phe Lys Lys Pro			
	530	535	540
Glu Phe Thr Met Asn Val Asn Ser Glu Tyr Phe Ile Ser Tyr Phe Ala			
	545	550	555
Gln Leu Arg Tyr Asn Thr Phe Asp Lys Gly Tyr Phe Pro Ser Lys Gly			
	565	570	575
Ser Asn Phe Ser Gly Ala Tyr Ser Leu Tyr Thr Asp Asn Phe Ala Arg			
	580	585	590
Tyr Asn Gly His Ala Pro Phe Ser Ala Leu Ser Ala Ser Trp Glu Ser			
	595	600	605
Val Phe Ser Ile Ser Asn Arg Leu Thr Leu Ile Pro Ala Leu Tyr Gly			
	610	615	620

Arg Val Leu Ile Gly Gln Glu Ile Pro Tyr Ala Tyr Glu Asn Ala Leu
 625 630 635 640
 Gly Gly Asp Val Phe Gly Arg Tyr Leu Pro Gln Gln Leu Pro Phe Ala
 645 650 655
 Gly Ile Tyr Asn Ile Glu Leu Thr His Asn Ser Val Ala Val Ala Ser
 660 665 670
 Leu Lys Leu Arg Gln Arg Met Gly Ser Lys His Tyr Ile Thr Leu Ala
 675 680 685
 Gly Asn Phe Ala Leu Ser Asp Asn Phe Phe Lys Ile Leu Lys Gly
 690 695 700
 Asn Arg Ile Tyr Gly Cys Ser Ile Gly Tyr Gly Leu Asp Ser Met Phe
 705 710 715 720
 Gly Pro Leu Glu Ala Ser Leu Gly Tyr Ser Asn Gln Ser Lys Asp Val
 725 730 735
 Gly Phe Tyr Val Asn Leu Gly Phe Ser Phe
 740 745

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<400> 6368

Leu Pro Glu Lys Ser Ile Gly Ser Arg Tyr Pro Gln Ile Glu Asn Ala
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 Val Tyr Arg Ile Asn Gly Gln Leu Ala Thr Ser Ser Ala Asn Asp Leu
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 Ser Ala Ile Ala Gly Phe Ser Phe Ile Ser Ser Thr Phe Ala Pro Asp
 35 40 45
 Asn His Ser Thr Glu His Met Lys Lys Leu Cys Ile Phe Leu Leu Leu
 50 55 60
 Leu Phe Ala Ala Thr Gly Ile Leu Phe Ala Gln Glu Ile Glu Lys Ser
 65 70 75 80
 Val Lys Glu Arg Leu Ser Asn Tyr Phe Glu Thr Tyr Thr Pro Ala Ser
 85 90 95
 Ala Asn Thr Gly Ser Cys Lys Leu Lys Ser Val Asp Ile Asp Phe Glu
 100 105 110
 Gly Arg Lys Leu Ser Ile Tyr Ala Ser Glu Ser Phe Ala Tyr Gln Pro
 115 120 125
 Phe Val Pro Glu Thr Val Asp Glu Ile Tyr His Gln Ile Glu Glu Leu
 130 135 140
 Leu Pro Gly Pro Val Arg Phe Phe Arg Thr Thr Ile Tyr Ala Asn Asn
 145 150 155 160
 Gln Pro Ile Glu Glu Leu Ile Pro Asn Phe Phe Arg Gly Lys Lys Lys
 165 170 175
 Lys Asp Lys Ser Arg Leu Ser Asn Ala Glu Tyr Lys Gly Ala Pro Trp
 180 185 190
 Val Ile Asn Thr Ser Arg Pro Tyr Glu Ile Thr Lys Gly Leu Gln Asn
 195 200 205
 Arg His Ile Ser Leu Trp Gln Ser His Gly Lys Tyr Tyr Lys Asn Asp
 210 215 220
 Lys Gly Glu Trp Gly Trp Gln Arg Pro Arg Leu Phe Cys Thr Thr Glu
 225 230 235 240
 Asp Leu Phe Thr Gln Ser Phe Ile Leu Pro Tyr Val Ile Pro Met Leu
 245 250 255
 Glu Asn Ala Gly Ala Asn Val Tyr Thr Pro Arg Glu Arg Asp Thr Gln
 260 265 270
 Lys Asn Glu Val Ile Val Asp Asn Asp Thr Arg Asn Gly Ser Ile Tyr
 275 280 285

Leu	Glu	Met	Lys	Ser	Arg	Lys	Ala	Arg	Trp	Glu	Lys	Thr	Asp	Gly	Tyr
290						295				300					
Gly	Phe	Ala	Gln	Arg	Lys	Pro	Val	Tyr	Glu	Asp	Gly	Glu	Asn	Pro	Phe
305					310					315					320
Leu	Thr	Gly	Ser	Ala	Arg	Phe	Thr	Arg	Thr	Glu	Lys	Lys	Lys	Asn	Lys
				325					330					335	
Ala	Phe	Ala	Glu	Trp	Ile	Pro	Thr	Ile	Pro	Glu	Thr	Gly	Ser	Tyr	Ala
			340					345					350		
Val	Tyr	Val	Ser	Tyr	Gln	Thr	Leu	Pro	Asn	Ser	Val	Ser	Asp	Ala	Lys
		355					360					365			
Tyr	Leu	Val	Phe	His	Lys	Gly	Gly	Val	Thr	Glu	Phe	Lys	Val	Asn	Gln
	370					375					380				
Arg	Ile	Gly	Gly	Gly	Thr	Trp	Val	Tyr	Leu	Gly	Thr	Phe	Glu	Phe	Asp
385					390					395					400
Lys	Gly	Ser	Asn	Asp	Tyr	Gly	Met	Val	Val	Leu	Ser	Asn	Glu	Ser	Ser
				405					410					415	
Glu	Asn	Gly	Val	Ile	Cys	Ala	Asp	Ala	Val	Arg	Phe	Gly	Gly	Gly	Met
			420					425					430		
Gly	Asn	Ile	Ser	Arg	Gly	Thr	Val	Ser	Gly	Leu	Pro	Arg	Tyr	Leu	Glu
		435					440					445			
Gly	Ala	Arg	Tyr	Ser	Ala	Gln	Trp	Ala	Gly	Met	Pro	Tyr	Asp	Val	Tyr
	450					455					460				
Gly	Gly	Lys	Gln	Gly	Thr	Asn	Asp	Tyr	Ala	Asp	Asp	Ile	Asn	Ala	Arg
465					470					475					480
Ser	Asn	Thr	Ile	Asn	Tyr	Leu	Ser	Gly	Gly	Ser	Val	Phe	Asn	Pro	Gly
				485					490					495	
Gln	Lys	Gly	Leu	Gly	Val	Pro	Phe	Glu	Met	Asn	Val	Ala	Leu	His	Ser
			500					505					510		
Asp	Ala	Gly	Tyr	Ser	Lys	Thr	Asn	Asp	Ile	Val	Gly	Ser	Leu	Ser	Ile
		515					520					525			
Tyr	Thr	Thr	Asp	Phe	Asn	Asn	Gly	Leu	Leu	Asn	Ser	Gly	Asn	Ser	Arg
	530					535					540				
Tyr	Ala	Ser	Arg	Asp	Leu	Ala	Asp	Leu	Leu	Leu	Thr	Gln	Ile	Gln	Lys
545					550					555					560
Asp	Ile	Arg	Ala	Lys	Phe	Asn	Ile	Gln	Trp	Thr	Arg	Arg	Ser	Met	Trp
				565					570					575	
Asp	Arg	Asn	Tyr	Ser	Glu	Thr	Arg	Leu	Pro	Ala	Ala	Pro	Ser	Thr	Ile
		580						585					590		
Val	Glu	Leu	Leu	Ser	His	Gln	Asn	Phe	Ala	Asp	Met	Lys	Leu	Gly	His
		595				600						605			
Asp	Pro	Asn	Phe	Lys	Phe	Thr	Val	Gly	Arg	Ala	Ile	Tyr	Lys	Ala	Val
	610					615					620				
Leu	Gln	Phe	Ile	Ser	Ser	Gln	His	Asn	Lys	Glu	Tyr	Val	Val	Gln	Pro
625					630					635					640
Leu	Pro	Val	Ser	Asn	Phe	Ala	Ile	Glu	Phe	Gly	Lys	Lys	Arg	Asn	Thr
				645					650					655	
Leu	Glu	Leu	Ser	Trp	Gln	Gly	Glu	Asn	Asp	Pro	Leu	Glu	Pro	Thr	Ala
			660					665					670		
Arg	Pro	Arg	Glu	Tyr	Met	Val	Tyr	Thr	Arg	Ile	Gly	Tyr	Gly	Gly	Phe
		675					680					685			
Asp	Asn	Gly	Val	Arg	Val	Asn	Lys	Pro	Ser	Tyr	Thr	Leu	Lys	Ile	Glu
	690					695					700				
Pro	Gly	Leu	Val	Tyr	Ser	Phe	Lys	Val	Thr	Ala	Val	Asn	His	Gly	Gly
705					710					715					720
Glu	Ser	Phe	Pro	Ser	Glu	Ile	Leu	Ser	Ala	Tyr	Lys	Ala	Lys	Gln	Glu
				725					730					735	
His	Ala	Arg	Val	Leu	Ile	Ile	Asn	Gly	Phe	Asn	Arg	Leu	Ser	Gly	Pro
			740					745					750		
Ala	Val	Ile	Asp	Thr	Pro	Asp	Glu	Ala	Gly	Phe	Asp	Leu	Glu	Gln	Asp

755	760	765
Pro Gly Val Ala Tyr Gln Tyr Asn Ile Ser Leu Cys Gly Ala Gln Thr		
770	775	780
Gly Phe Asp Arg Ser Gln Ala Gly Lys Glu Gly Lys Gly Ser Leu Gly		
785	790	795
Tyr Ser Gly Asn Glu Leu Glu Gly Met Lys Ile Ala Gly Asn Thr Phe		800
	805	810
Asp Tyr Pro Phe Val His Gly Lys Ala Ile Gln Ala Ala Gly Asn Tyr		815
	820	825
Ser Phe Val Ser Cys Ser Asp Glu Ala Val Glu Asn Gly Arg Ile Gln		830
	835	840
Pro Glu His Tyr Pro Ile Val Asp Phe Ile Leu Gly Leu Glu Lys Asp		845
	850	855
Asp Ile Leu Ser Asn Pro Ala Arg Lys Thr Tyr Tyr Lys Thr Phe Ser		860
865	870	875
Ser Pro Met Gln Arg Ile Leu Thr Ala Tyr Cys Gln Ser Gly Gly Asn		880
	885	890
Leu Leu Val Ser Gly Ser Tyr Ile Gly Ser Asp Met Ser Asn Ser Gln		895
	900	905
Gly Asn Arg Glu Phe Thr Glu Lys Ile Leu Lys Tyr Gly Phe Gln Gly		910
	915	920
Ser Leu Lys Asp Thr Arg Ser Gly Gln Ile Thr Gly Leu Gly Arg Thr		925
930	935	940
Leu Gln Ile Pro Arg Leu Pro Asn Glu Lys Ala Tyr Ala Val Thr Ala		945
945	950	955
Pro Asp Cys Ile Val Pro Val Asp Ser Ala Phe Pro Val Phe Val Tyr		960
	965	970
Gln Pro Gly Gln Tyr Ser Ala Gly Ile Ala Tyr Lys Gly Asn Tyr Arg		975
	980	985
Val Phe Ala Met Gly Phe Pro Phe Glu Ser Ile Glu Ser Glu Thr Asp		990
	995	1000
Arg Ala Ile Val Met Ala Ala Ile Leu Lys Phe Phe Gly Glu Lys		1005
1010	1015	1020

<210> 6369

<211> 1025

<212> PRT

<213> B.fragilis

<400> 6369

Phe Lys Arg Asn Ser Ser Ser Leu Ser Leu Gly Glu Gly Arg Gly Glu	
1	5
Thr Leu Leu Asn Met Lys Val Ser Phe Phe Ile Asp Arg Pro Val Phe	
	20
Ser Ile Val Ile Ser Ile Leu Ile Val Ile Ile Gly Ile Ile Gly Leu	
	35
Thr Met Leu Pro Val Asp Gln Tyr Pro Gln Ile Thr Pro Pro Val Val	
	50
Lys Ile Ser Ala Ser Tyr Pro Gly Ala Ser Ala Leu Thr Val Ser Gln	
65	70
Ala Val Ala Thr Pro Ile Glu Gln Glu Ile Asn Gly Thr Pro Gly Met	
	85
Leu Tyr Met Glu Ser Asn Ser Ser Asn Ser Gly Gly Phe Ser Ala Thr	
	100
Val Thr Phe Asp Val Ser Ala Asp Pro Asp Leu Ala Ala Val Glu Ile	
	115
Gln Asn Arg Val Lys Leu Ala Glu Ser Arg Leu Pro Ala Glu Val Ile	
	130
Gln Asn Gly Ile Ser Val Glu Lys Gln Ala Pro Ser Gln Leu Met Thr	

145 150 155 160
 Leu Thr Leu Met Ser Ser Asp Pro Lys Phe Asp Glu Ile Tyr Leu Ser
 165 170 175
 Asn Phe Ala Thr Ile Asn Val Leu Asp Val Ile Arg Arg Ile Pro Gly
 180 185 190
 Val Gly Arg Val Ser Asn Ile Gly Ser Arg Tyr Tyr Ala Met Gln Ile
 195 200 205
 Trp Ala Glu Pro Asp Lys Leu Ala Asn Phe Gly Leu Thr Val Gln Asp
 210 215 220
 Leu Gln Asn Ala Leu Lys Asp Gln Asn Arg Glu Ser Ala Ala Gly Val
 225 230 235 240
 Leu Gly Gln Gln Pro Val Lys Gly Leu Asp Val Thr Ile Pro Ile Thr
 245 250 255
 Thr Gln Gly Arg Leu Ser Thr Val Glu Gln Phe Glu Asn Ile Val Ile
 260 265 270
 Arg Ala Asn Thr Asn Gly Ser Ile Ile Arg Leu Arg Asp Val Ala Arg
 275 280 285
 Val Ser Leu Glu Ala Ser Ser Tyr Ser Thr Glu Ser Gly Ile Asn Gly
 290 295 300
 Lys Asn Ala Ala Val Leu Gly Ile Tyr Met Leu Pro Gly Ala Asn Ala
 305 310 315 320
 Met Glu Val Ala Lys Ser Val Lys Glu Ala Met Asp Glu Ile Ser Lys
 325 330 335
 Asn Phe Pro Glu Gly Leu Ser Tyr Glu Val Pro Phe Asp Met Thr Thr
 340 345 350
 Tyr Ile Ser Glu Ser Ile His Glu Val Tyr Lys Thr Leu Phe Glu Ala
 355 360 365
 Leu Ile Leu Val Val Leu Val Val Tyr Leu Ser Leu Gln Ser Trp Arg
 370 375 380
 Ala Thr Leu Ile Pro Ile Val Ala Val Pro Ile Ser Leu Ile Gly Thr
 385 390 395 400
 Phe Gly Phe Met Leu Ile Phe Gly Phe Ser Leu Asn Ile Leu Thr Leu
 405 410 415
 Leu Gly Leu Ile Leu Ala Ile Gly Ile Val Val Asp Asp Ala Ile Val
 420 425 430
 Val Val Glu Asn Val Glu Arg Ile Met Glu Glu Glu Lys Leu Pro Pro
 435 440 445
 Tyr Glu Ala Thr Lys Lys Ala Met Asn Gly Leu Ala Gly Ala Leu Ile
 450 455 460
 Ala Thr Ser Leu Val Leu Cys Ala Val Phe Val Pro Val Ser Phe Leu
 465 470 475 480
 Ser Gly Ile Thr Gly Gln Leu Tyr Arg Gln Phe Thr Ile Thr Ile Ala
 485 490 495
 Val Ser Val Leu Ile Ser Thr Val Val Ala Leu Thr Leu Ser Pro Val
 500 505 510
 Met Cys Ser Leu Ile Leu Lys Pro Asp Asn Gly Lys Lys Lys Asn Ile
 515 520 525
 Val Phe Arg Lys Ile Asn His Trp Leu Asn Val Gly Asn His Lys Tyr
 530 535 540
 Val Ile Ala Ile Arg Arg Val Ile Gly Asn Pro Arg Arg Val Leu Ala
 545 550 555 560
 Gly Phe Gly Val Val Leu Ile Gly Ile Leu Leu Ile His Arg Leu Ile
 565 570 575
 Pro Thr Ser Phe Leu Pro Val Glu Asp Gln Gly Tyr Phe Lys Ile Glu
 580 585 590
 Leu Glu Leu Pro Glu Gly Ala Thr Leu Glu Arg Thr Arg Glu Val Thr
 595 600 605
 Asp Arg Ala Ile Thr Tyr Leu Glu Lys Asn Pro Tyr Ile Ala Tyr Val
 610 615 620

145 150 155 160
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555 560
 565 570 575
 580 585 590
 595 600 605
 610 615 620

Gln Asn Val Thr Gly Ser Ser Pro Arg Val Gly Ser Asn Gln Ala Arg
 625 630 635 640
 Ser Glu Leu Thr Val Ile Leu Lys Pro Trp Glu Asp Arg Lys Asp Thr
 645 650 655
 Ser Ile Asp Glu Ile Met Ser Asn Val Arg His Asp Leu Ser Glu Tyr
 660 665 670
 Pro Glu Cys Lys Val Tyr Leu Ser Thr Pro Pro Val Ile Pro Gly Leu
 675 680 685
 Gly Thr Ser Gly Gly Phe Glu Met Gln Leu Glu Ala Arg Gly Glu Ala
 690 695 700
 Thr Phe Glu Asn Leu Val Gln Ala Ala Asp Thr Leu Met Tyr Tyr Ala
 705 710 715 720
 Ser Gln Arg Lys Glu Leu Thr Gly Leu Ser Ser Ser Leu Gln Ser Asp
 725 730 735
 Ile Pro Gln Leu Tyr Phe Asp Val Asp Arg Asp Lys Val Lys Met Leu
 740 745 750
 Gly Val Pro Leu Ala Asp Val Phe Ser Thr Met Lys Ala Tyr Thr Gly
 755 760 765
 Ser Val Tyr Val Asn Asp Phe Asn Met Phe Thr Arg Ile Tyr Lys Val
 770 775 780
 Tyr Ile Gln Ala Glu Ala Pro Tyr Arg Asp His Lys Asp Asn Ile Asn
 785 790 795 800
 Leu Leu Phe Val Lys Ala Ser Asn Gly Ala Met Ile Pro Leu Thr Ser
 805 810 815
 Leu Gly Asn Ala Ser Tyr Thr Thr Gly Pro Gly Ser Ile Lys Arg Phe
 820 825 830
 Asn Met Phe Thr Thr Ala Val Phe Arg Gly Glu Ala Ala Gln Gly Tyr
 835 840 845
 Ser Ser Gly Gln Ala Met Glu Ile Met Glu Gln Ile Ala Arg Tyr His
 850 855 860
 Leu Pro Asp Asn Ile Gly Leu Glu Trp Ser Gly Leu Ser Tyr Gln Glu
 865 870 875 880
 Lys Lys Ala Gly Gly Gln Thr Gly Leu Val Leu Ala Leu Val Phe Leu
 885 890 895
 Phe Val Phe Leu Phe Leu Ala Ala Gln Tyr Glu Ser Trp Thr Val Pro
 900 905 910
 Ile Ala Val Leu Leu Ser Leu Pro Val Ala Ala Leu Gly Ala Tyr Leu
 915 920 925
 Gly Val Trp Val Cys Gly Leu Glu Asn Asp Val Tyr Phe Gln Ile Gly
 930 935 940
 Leu Val Met Leu Val Gly Leu Ala Ala Lys Asn Ala Ile Leu Ile Val
 945 950 955 960
 Glu Phe Ala Lys Val Gln Val Asp Arg Gly Gly Asp Leu Ile Gln Ser
 965 970 975
 Ala Ile His Ala Ala Gln Leu Arg Phe Arg Pro Ile Leu Met Thr Ser
 980 985 990
 Leu Ala Phe Val Leu Gly Met Leu Pro Met Val Leu Ala Thr Gly Pro
 995 1000 1005
 Gly Ser Ala Ser Arg Ala Ala Ile Gly Thr Gly Val Phe Phe Gly Met
 1010 1015 1020
 Ile
 1025

<210> 6370

<211> 258

<212> PRT

<213> B.fragilis

<400> 6370

Leu Phe Met Lys Ile Ser Ile Val Gln Thr Asp Ile Ile Trp Glu Asn
 1 5 10 15
 Lys Gln Glu Asn Leu Arg Leu Leu Arg Glu Lys Leu Ser Pro Leu Arg
 20 25 30
 Gly Thr Thr Glu Ile Val Val Leu Pro Glu Met Phe Thr Thr Gly Phe
 35 40 45
 Ser Met Asn Ser Arg Leu Leu Ala Glu Pro Val Ser Gly Thr Thr Leu
 50 55 60
 Arg Ser Leu Lys Asn Tyr Ala Ile Glu Phe His Leu Ser Leu Ala Gly
 65 70 75 80
 Ser Phe Ile Cys Glu Glu Gln Gly Ser Tyr Tyr Asn Arg Ala Phe Leu
 85 90 95
 Ile Thr Pro Asp Gly Gln Glu Phe Tyr Tyr Asp Lys Arg His Leu Phe
 100 105 110
 Arg Met Gly His Glu Ala Glu His Phe Ser Ala Gly Ser Arg Lys Val
 115 120 125
 Ile Ile Pro Tyr Asn Gly Trp Asn Ile Cys Leu Gln Val Cys Tyr Asp
 130 135 140
 Leu Arg Phe Pro Val Trp Ser Arg Asn Val Asn Asn Glu Tyr Asp Leu
 145 150 155 160
 Leu Ile Tyr Val Ala Ser Trp Pro Thr Pro Arg Ile Gln Ala Trp Asn
 165 170 175
 Thr Leu Leu Cys Ala Arg Ala Ile Glu Asn Gln Cys Tyr Val Cys Gly
 180 185 190
 Val Asn Arg Ile Gly Gln Asp Gly Asn Gly Leu Cys Tyr Pro Gly Tyr
 195 200 205
 Ser Ala Leu Tyr Gly Pro Lys Gly Glu Asn Leu Ala Gly Thr Pro Asp
 210 215 220
 Ser Glu Glu Lys Ile Gln Thr Ile Glu Leu Ser Leu Glu Ala Leu Thr
 225 230 235 240
 Thr Phe Arg His Lys Phe Pro Cys Trp Lys Asp Ala Asp Pro Phe Leu
 245 250 255
 Leu Tyr

<210> 6371
 <211> 112
 <212> PRT
 <213> B.fragilis

<400> 6371
 Thr Ile Asn Glu Glu Arg Gly Thr Ile Asn Ala Arg Arg Met Gly Asn
 1 5 10 15
 Ile Leu Lys Asp Lys Ser Met Ala Phe Ala Ile Gln Ile Val Asn Leu
 20 25 30
 His Lys Tyr Pro Asn Lys Arg Lys Ala Tyr Ser Leu Ser Asp Gln Ile
 35 40 45
 Leu Ile Ser Gly Thr Ala Ile Gly Val Leu Gln Lys Glu Thr Glu Cys
 50 55 60
 Ala Glu Ser Asn Ala Asp Phe Ile His Asn Ile Ala Ser Pro Gln Lys
 65 70 75 80
 Asn Val Met Lys Pro Phe Ser Gly Leu Asn Cys Tyr Leu Lys Gln Asn
 85 90 95
 Ile Tyr Pro Lys Gln Asn Ile Gln Ala Cys Leu Gln Thr Gln Met Asn
 100 105 110

<210> 6372
 <211> 125
 <212> PRT

<213> B.fragilis

<400> 6372

Trp Arg Thr Asp Asp Phe Thr Val Tyr Tyr Phe Met Ser Glu Ile Gln
 1 5 10 15
 Asn Gln Ile Lys Lys Trp Pro Val Thr Ala Ile Lys Lys Ile Lys Ser
 20 25 30
 Thr Phe Gly Ser Ala Glu Lys Phe Tyr Ala Thr Val Tyr Leu Ile Ala
 35 40 45
 Arg Asn Glu His His Cys Gln Met Met Gly Val Ala Gly Ala Glu Gln
 50 55 60
 Arg Leu Lys Thr Ile His Ala Tyr Gln Gly Met Ile Arg Phe Met Leu
 65 70 75 80
 Asp Glu Glu Gly Leu Asn Gly Lys Glu Ile Leu Asp Thr Ile Ala Gly
 85 90 95
 Glu Tyr Leu Glu Asp Phe Val Asn Tyr Arg Glu Gln Asp Phe Gly Met
 100 105 110
 Thr Asn Glu Glu Phe Ile Ala Ile Ile Lys Arg Ile Gly
 115 120 125

<210> 6373

<211> 409

<212> PRT

<213> B.fragilis

<400> 6373

Leu Ile Lys Asp Lys Leu Ile Leu Ile Ile Gln Thr Ser Met Arg Leu
 1 5 10 15
 Phe Phe Thr Arg Lys Glu Leu Lys Leu Arg Arg Lys Arg Thr Ile Ala
 20 25 30
 Gly Ile Val Cys Leu Ala Leu Val Ala Gly Ile Tyr Trp Ile Leu Thr
 35 40 45
 Arg Pro His Lys Val Glu Pro Glu Val Pro Thr Val Ile Val Glu Pro
 50 55 60
 Ala Glu Arg Asp Asn Val Glu Ile Phe Gly Glu Tyr Val Gly Arg Ile
 65 70 75 80
 Arg Ala Gln Gln Phe Val Glu Val Arg Ala Arg Val Glu Gly Tyr Leu
 85 90 95
 Glu Ser Met Leu Phe Ala Glu Gly Thr Tyr Val Asn Lys Asn Gln Val
 100 105 110
 Leu Phe Val Ile Asn Gln Asp Gln Tyr Arg Ala Lys Ala Asp Lys Ala
 115 120 125
 Arg Ala Gln Leu Lys Lys Asp Glu Ala Gln Ala Leu Lys Ala Lys Arg
 130 135 140
 Asp Leu Glu Arg Ile Lys Pro Leu Tyr Ala Gln Asn Ala Ala Ser Gln
 145 150 155 160
 Leu Asp Leu Asp Asn Ala Glu Ala Ala Tyr Glu Ser Ala Val Ala Thr
 165 170 175
 Val Ala Met Ser Glu Ala Asp Leu Ala Gln Ala Glu Leu Glu Leu Gly
 180 185 190
 Tyr Thr Leu Val Arg Ser Pro Leu Ser Gly His Ile Ser Glu Arg Asn
 195 200 205
 Val Asp Leu Gly Thr Leu Val Gly Pro Gly Gly Lys Ser Leu Leu Ala
 210 215 220
 Thr Val Val Lys Ser Asp Thr Val Leu Val Asp Phe Ser Met Thr Ala
 225 230 235 240
 Leu Asp Tyr Leu Lys Ser Lys Glu Arg Asn Ile Asn Ile Gly Gln Gln
 245 250 255
 Asp Ser Ser Arg Ser Trp Gln Pro Asn Ile Thr Ile Thr Leu Ala Asp

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

<400> 6374

Asn	Cys	Thr	Trp	Val	Ser	Gly	Trp	Ile	Arg	Val	Ser	Leu	Arg	Met	Tyr
1				5					10					15	
Cys	Ile	Val	Thr	Gly	Leu	Asn	Thr	Trp	Ile	Met	Tyr	Thr	Asn	Arg	Gly
			20					25					30		
Gln	Tyr	Ala	Val	Arg	Gly	Ser	Ile	Ile	Asp	Val	Phe	Ser	Phe	Ser	Ser
		35					40					45			
Glu	Tyr	Pro	Tyr	Arg	Ile	Asp	Phe	Phe	Gly	Asn	Asp	Val	Glu	Ser	Ile
	50					55					60				
Arg	Thr	Phe	Glu	Val	Asp	Ser	Gln	Leu	Ser	Lys	Glu	Lys	Lys	Glu	Ser
65					70					75					80
Ile	Val	Ile	Val	Pro	Asp	Leu	Ala	Val	Thr	Gly	Lys	Val	Thr	Thr	Ser
				85					90					95	
Phe	Leu	Asp	Phe	Ile	Pro	Lys	Asp	Thr	Thr	Leu	Ala	Met	Arg	Asp	Phe
		100						105					110		
Leu	Trp	Leu	Arg	Glu	Arg	Ile	Gln	Val	Val	His	Asp	Glu	Ser	Leu	Thr
		115					120					125			
Pro	Gln	Ala	Leu	Ala	Ser	Gln	Glu	Ala	Glu	Glu	Asn	Gly	Gly	Ile	Thr
		130				135					140				
Leu	Glu	Gly	Lys	Leu	Ile	Asp	Gly	Ser	Glu	Phe	Thr	Val	Arg	Ala	Leu
145					150					155					160
Asp	Phe	Arg	Arg	Met	Glu	Phe	Gly	Asn	Lys	Pro	Thr	Gly	Thr	Pro	Asp
				165					170					175	
Ala	Thr	Leu	Thr	Phe	His	Thr	Thr	Ala	Gln	Pro	Ile	Phe	His	Lys	Asn
			180					185					190		
Phe	Asp	Leu	Val	Ala	Glu	Ser	Phe	Lys	Glu	Tyr	Leu	Asn	Arg	Gly	Tyr
		195					200					205			
Ala	Leu	Tyr	Ile	Cys	Ser	Asp	Ser	Thr	Lys	Gln	Thr	Asp	Arg	Ile	Lys
		210				215					220				
Ala	Ile	Phe	Glu	Asp	Arg	Gly	Asp	Arg	Ile	Gln	Phe	Thr	Ala	Val	Glu
225					230					235					240
Arg	Thr	Leu	His	Glu	Gly	Phe	Ala	Asp	Asp	Thr	Leu	Lys	Leu	Cys	Leu
				245					250					255	
Phe	Thr	Asp	His	Gln	Leu	Phe	Asp	Arg	Phe	His	Lys	Tyr	Asn	Leu	Lys

[illegible]

Thr Pro Glu Ala Lys Arg Arg Leu Gln Ala Ile Glu Asn Phe Ser Asp
 740 745 750
 Leu Gly Ser Gly Ile His Ile Ala Met Gln Asp Leu Asp Ile Arg Gly
 755 760 765
 Ala Gly Asn Met Leu Gly Ala Glu Gln Ser Gly Phe Ile Ala Asp Leu
 770 775 780
 Gly Tyr Glu Thr Tyr Gln Lys Ile Leu Ser Glu Ala Val His Glu Leu
 785 790 795 800
 Lys Thr Asp Glu Phe Ala Glu Leu Tyr Ala Asp Glu Leu Lys Gly Glu
 805 810 815
 Gly Val Ile Ser Gly Glu Glu Phe Val Glu Glu Cys Gln Val Glu Ser
 820 825 830
 Asp Leu Glu Leu Leu Leu Pro Ala Asn Tyr Val Thr Gly Ser Ser Glu
 835 840 845
 Arg Met Leu Leu Tyr Arg Glu Leu Asp Gly Leu Thr Leu Asp Arg Asp
 850 855 860
 Val Asp Ala Phe Arg Ser Arg Leu Glu Asp Arg Phe Gly Pro Ile Pro
 865 870 875 880
 Pro Glu Thr Glu Glu Leu Leu Arg Ile Val Pro Leu Arg Arg Leu Ala
 885 890 895
 Ala Arg Leu Gly Val Glu Lys Val Phe Leu Lys Gly Gly Arg Met Thr
 900 905 910
 Leu Phe Phe Val Asn Asn Ala Glu Ser Pro Tyr Tyr Gln Ser Ala Ala
 915 920 925
 Phe Gly Lys Met Ile Asp Tyr Met Met Lys Tyr Thr Arg Arg Cys Asp
 930 935 940
 Leu Arg Glu Gln Asn Gly Arg Arg Ser Met Leu Val Lys Asp Ile Pro
 945 950 955 960
 Asn Val Glu Thr Ala Val Ser Val Leu Leu Glu Ile Val Ala Leu Pro
 965 970 975
 Val Lys Glu Lys Glu
 980

<210> 6375
 <211> 113
 <212> PRT
 <213> B.fragilis

<400> 6375
 Arg Pro Ala Arg Pro Leu Tyr Arg Cys Asp Leu Ser Gln Gln Tyr Glu
 1 5 10 15
 Ser Ile Arg Val Ala Ala Thr His Gln Ala Leu Ser His Leu Val Val
 20 25 30
 Lys Ala Gly Ser Arg Arg Arg Gly Gly Gly Met Ile Thr Val Asp Thr
 35 40 45
 Cys Gly Met Thr Asn Tyr Ser Pro Leu Ile Pro Ala Ile Lys Ala Met
 50 55 60
 Cys Asn Ala Asn Pro Gly Asp Lys Met Glu Ile Val Thr Asp Gln Val
 65 70 75 80
 Ala Ala Phe Gln Asp Leu Lys Glu Tyr Leu Ser Glu Gln Gly Ile Gly
 85 90 95
 Phe Arg Glu Ile Tyr Asp Gly Glu Arg Met Thr Leu Gln Phe Thr Ile
 100 105 110
 Leu

<210> 6376
 <211> 392
 <212> PRT

<213> B.fragilis

<400> 6376

Leu Ile Thr Arg Met Leu Thr Gln Leu Ile Asn Ala Arg Ile Leu Thr
 1 5 10 15
 Pro Gln Gly Trp Met Lys Asp Gly Ser Val Leu Ile Arg Asp Asn Lys
 20 25 30
 Ile Leu Glu Val Thr Asn Cys Asp Leu Ala Val Ile Gly Ala Glu Leu
 35 40 45
 Ile Asp Val Lys Gly Met Tyr Val Val Pro Gly Gly Val Glu Ile His
 50 55 60
 Val His Gly Gly Gly Arg Asp Phe Met Glu Cys Thr Glu Asp Ala
 65 70 75 80
 Phe Arg Ala Ala Val His Thr His Met Lys His Gly Thr Thr Ser Ile
 85 90 95
 Phe Pro Thr Leu Ser Ser Ser Thr Val Pro Met Ile Gln Gln Ala Ala
 100 105 110
 Glu Thr Cys Thr Lys Leu Met Glu Glu Lys Asn Ser Pro Ile Leu Gly
 115 120 125
 Leu His Leu Glu Gly His Tyr Leu Asn Met Lys Met Ala Gly Gly Gln
 130 135 140
 Ile Pro Glu Asn Ile Lys Asn Pro Asp Pro Asn Glu Tyr Ile Pro Ile
 145 150 155 160
 Val Glu Gln Tyr His Cys Ile Lys Arg Trp Asp Ala Ala Pro Glu Leu
 165 170 175
 Pro Gly Ala Met Gln Phe Gly Lys Tyr Ile Ala Ala Lys Gly Ile Leu
 180 185 190
 Pro Ser Val Ala His Thr Gln Ala Glu Phe Glu Asp Ile Arg Thr Ala
 195 200 205
 Tyr Glu Ala Gly Tyr Thr His Ala Thr His Phe Tyr Asn Ala Met Pro
 210 215 220
 Gly Phe His Lys Arg Arg Glu Tyr Lys Tyr Glu Gly Thr Val Glu Ser
 225 230 235 240
 Ile Tyr Leu Leu Asp Asp Met Thr Val Glu Val Val Ala Asp Gly Ile
 245 250 255
 His Val Pro Pro Thr Ile Leu Arg Leu Val Tyr Lys Ile Lys Gly Val
 260 265 270
 Glu Arg Thr Cys Leu Ile Thr Asp Ala Leu Ala Cys Ala Asp Ser Asp
 275 280 285
 Ser Lys Glu Ala Phe Asp Pro Arg Val Ile Ile Glu Asp Gly Val Cys
 290 295 300
 Lys Leu Ala Asp His Ser Ala Leu Ala Gly Ser Val Ala Thr Met Asp
 305 310 315 320
 Arg Leu Ile Arg Thr Val Val Gln Lys Ala Glu Ile Pro Leu Glu Asp
 325 330 335
 Ala Val Arg Met Ala Ser Glu Thr Pro Ala Arg Ile Met Gly Val Tyr
 340 345 350
 Asp Arg Lys Gly Ser Leu Gln Lys Gly Lys Asp Ala Asp Ile Leu Val
 355 360 365
 Leu Asp Glu Asp Leu Asn Val Arg Ala Val Trp Ala Met Gly Lys Leu
 370 375 380
 Val Pro Glu Thr Asn Thr Leu Phe
 385 390

<210> 6377

<211> 196

<212> PRT

<213> B.fragilis

<400> 6377

Asn His Arg Arg Tyr Arg Glu Thr Glu Leu Arg Met Lys Lys Ala Ile
 1 5 10 15
 Tyr Ser Phe Ile Tyr Tyr His Leu Leu Gly Trp Lys Thr Asn Val Thr
 20 25 30
 Val Pro Asn Tyr Asp Lys Cys Val Ile Cys Ala Ala Pro His Thr Thr
 35 40 45
 Asn Met Asp Leu Phe Ile Gly Lys Leu Phe Tyr Gly Ala Ile Gly Arg
 50 55 60
 Lys Thr Ser Phe Met Met Lys Lys Glu Trp Phe Phe Pro Leu Gly
 65 70 75 80
 Ile Leu Phe Lys Ala Val Gly Gly Ile Pro Val Asn Arg Gly Arg Lys
 85 90 95
 Ser Ser Leu Val Glu Gln Met Ala Glu Val Phe Ala Lys Arg Pro Lys
 100 105 110
 Phe His Leu Ala Ile Thr Pro Glu Gly Thr Arg Lys Arg Asn Pro Asn
 115 120 125
 Trp Lys Lys Gly Phe Tyr Tyr Ile Ala Leu Lys Ala Gln Val Pro Ile
 130 135 140
 Val Leu Ile Gly Ile Asp Tyr Asn Thr Lys Thr Val Thr Ser Thr Lys
 145 150 155 160
 Ala Ile Met Pro Ser Gly Asp Ile Glu Lys Asp Met Arg Glu Ile Lys
 165 170 175
 Leu Tyr Phe Lys Asp Phe Lys Gly Lys His Pro Glu Asn Phe Ser Ile
 180 185 190
 Gly Asp Val Glu
 195

<210> 6378

<211> 460

<212> PRT

<213> B.fragilis

<400> 6378

Asp Met Lys Arg Thr Leu Ile Gln Asn Ala Thr Ile Val Asn Glu Gly
 1 5 10 15
 Arg Ser Val Arg Gly Ser Val Val Ile Glu Gly Glu Lys Ile Ala Glu
 20 25 30
 Val Leu Glu Lys Gly Gln Lys Pro Ala Ile Pro Cys Glu Thr Ile
 35 40 45
 Asn Ala Asn Gly Cys Tyr Leu Ile Pro Gly Val Ile Asp Asp His Val
 50 55 60
 His Phe Arg Asp Pro Gly Leu Thr His Lys Ala Asp Ile Ser Thr Glu
 65 70 75 80
 Ser Arg Ala Ala Ala Ala Gly Gly Val Thr Ser Ile Met Asp Met Pro
 85 90 95
 Asn Thr Asn Pro Gln Thr Thr Thr Leu Asp Ala Leu Asn Ala Lys Phe
 100 105 110
 Asp Leu Leu Ala Glu Lys Cys Ser Val Asn Tyr Ser Cys Tyr Phe Gly
 115 120 125
 Ala Thr Asn Asn Asn Tyr Thr Glu Phe Asp Lys Leu Asp Lys Asn Arg
 130 135 140
 Val Cys Gly Ile Lys Leu Phe Met Gly Ser Ser Thr Gly Asn Met Leu
 145 150 155 160
 Val Asp Lys Met Asn Ser Leu Leu Asn Ile Phe Asn Gly Thr Asp Leu
 165 170 175
 Leu Ile Ala Ala His Cys Glu Asn His Glu Thr Ile Lys Lys Asn Thr
 180 185 190
 Glu Lys Tyr Val Lys Glu Tyr Ile Glu Lys Tyr Pro His Gln Tyr Tyr


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<210> 6379
<211> 262
<212> PRT
<213> B.fragilis
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Arg	Arg	Val	Arg	Ser	Leu	Glu	Leu	Phe	Thr	Leu	Leu	Leu	Phe	Lys	Gln
1				5					10					15	
Lys	Arg	Tyr	Lys	Leu	Tyr	Met	Lys	Gln	Glu	Lys	Phe	Phe	Arg	Leu	Leu
			20					25					30		
Pro	Ile	Glu	Gly	Ala	Tyr	Asn	Ile	Arg	Asp	Leu	Gly	Gly	Tyr	Pro	Thr
		35					40					45			
Ser	Asp	His	Lys	His	Val	Lys	Trp	Lys	Thr	Phe	Ile	Arg	Ser	Gly	Asp
	50					55					60				
Leu	Asp	Lys	Leu	Thr	Glu	Ser	Asp	Leu	Asp	Tyr	Leu	Thr	Ser	Leu	His
65					70					75					80
Ile	Arg	Thr	Asp	Ile	Asp	Phe	Arg	Ser	Met	Gln	Glu	Lys	Lys	Ala	Ala
				85					90					95	
Ala	Asp	Lys	Ile	Pro	Ser	Thr	Val	Thr	Gln	Tyr	Ile	Pro	Leu	Ser	Ile
			100					105					110		
Glu	Ala	Gly	Asp	Met	Thr	Asp	Met	Ala	His	Phe	Asn	Leu	Asn	Asn	Ile
		115					120					125			
Pro	Gly	Ile	Leu	Glu	Gln	Ala	Tyr	Val	Tyr	Ile	Ile	Gln	Asn	Ala	Gln
	130					135						140			
Asp	Thr	Tyr	Arg	Glu	Phe	Phe	Arg	Ile	Val	Ser	Glu	Glu	Arg	Asn	Thr

145 150 155 160
 Pro Leu Leu Phe His Cys Ser Ala Gly Lys Asp Arg Thr Gly Ile Ala
 165 170 175
 Ala Ala Leu Leu Leu Gly Ala Leu Gly Val Asp Arg Glu Val Ile Met
 180 185 190
 Glu Asp Tyr Met Leu Ser Ala Glu Tyr Ile Lys Gly Lys Tyr Asp Ala
 195 200 205
 Ile Val Gln Ala His Pro Gly Phe Ala Pro Leu Thr Thr Val Arg Lys
 210 215 220
 Glu Tyr Leu Glu Ala Ala Phe Gln Thr Ile Asp Thr Asp Tyr Gln Gly
 225 230 235 240
 Met Asp Asn Tyr Leu Lys Asn Gln Leu Gly Val Asp Thr His Arg Leu
 245 250 255
 Arg Met Leu Tyr Thr Glu
 260

<210> 6380
 <211> 161
 <212> PRT
 <213> B.fragilis

<400> 6380

Val Glu Arg Met Asp Ile Phe Leu Ile Ile Leu Gly Ser Ile Cys Leu
 1 5 10 15
 Leu Val Gly Leu Ala Gly Cys Ile Val Pro Met Leu Pro Gly Pro Pro
 20 25 30
 Val Ser Tyr Leu Ala Leu Val Phe Leu His Phe Thr Asp Lys Val Ser
 35 40 45
 Phe Thr Ile Pro Gln Leu Phe Phe Trp Leu Phe Ile Val Val Leu Ile
 50 55 60
 Gln Ile Leu Asp Tyr Phe Ile Pro Met Phe Gly Val Lys Arg Leu Gly
 65 70 75 80
 Gly Thr Pro Trp Gly Lys Trp Gly Cys Ile Ile Gly Thr Phe Ala Gly
 85 90 95
 Ile Phe Leu Phe Ala Pro Trp Gly Val Phe Ile Gly Pro Phe Val Gly
 100 105 110
 Ala Val Val Gly Glu Leu Leu Gly Lys Glu Thr Lys Tyr Ala Leu
 115 120 125
 Lys Ala Gly Phe Gly Ala Phe Ala Gly Phe Leu Leu Gly Thr Val Leu
 130 135 140
 Lys Val Ala Val Cys Gly Trp Phe Ile Phe Cys Phe Ile Arg Ala Leu
 145 150 155 160
 Val

<210> 6381
 <211> 263
 <212> PRT
 <213> B.fragilis

<400> 6381

Arg Lys Ser Ile Thr Phe Val Phe Lys Phe Arg His Asn Met Gln Thr
 1 5 10 15
 Ser Asp Ser Ile Val Ile Ile Pro Thr Tyr Asn Glu Arg Glu Asn Ile
 20 25 30
 Glu Asn Ile Ile Arg Ala Val Phe Gly Leu Glu Lys Thr Phe His Ile
 35 40 45
 Leu Ile Ile Glu Asp Gly Ser Pro Asp Gly Thr Ala Ala Ile Val Lys
 50 55 60

Thr Leu Gln Gln Glu Phe Pro Asp Arg Leu Phe Met Ile Glu Arg Lys
 65 70 75 80
 Gly Lys Leu Gly Leu Gly Thr Ala Tyr Ile Thr Gly Phe Lys Trp Ala
 85 90 95
 Leu Glu His Ser Tyr Glu Tyr Ile Phe Glu Met Asp Ala Asp Phe Ser
 100 105 110
 His Asn Pro Asn Asp Leu Pro Arg Leu Tyr Glu Ala Cys Ala Val Gln
 115 120 125
 Gly Gly Asp Val Ala Ile Gly Ser Arg Tyr Val Ser Gly Val Asn Val
 130 135 140
 Val Asn Trp Pro Met Gly Arg Val Leu Met Ser Tyr Phe Ala Ser Lys
 145 150 155 160
 Tyr Val Arg Ile Val Thr Gly Leu Pro Ile His Asp Thr Thr Ala Gly
 165 170 175
 Phe Lys Cys Tyr Arg Arg Gln Val Leu Glu Thr Ile Asp Leu Asp His
 180 185 190
 Ile Arg Phe Lys Gly Tyr Ala Phe Gln Ile Glu Met Lys Phe Thr Ala
 195 200 205
 Tyr Lys Cys Gly Phe Lys Ile Ile Glu Val Pro Val Ile Phe Ile Asn
 210 215 220
 Arg Glu Leu Gly Thr Ser Lys Met Asn Ser Ser Ile Phe Gly Glu Ala
 225 230 235 240
 Val Phe Gly Val Ile Lys Leu Lys Val Asn Ser Trp Phe His Thr Phe
 245 250 255
 Pro Gln Lys Thr Lys Met Asn
 260

<210> 6382

<211> 689

<212> PRT

<213> B.fragilis

<400> 6382

Leu Ile Val Phe Ile Tyr Ile Cys Ser Glu Phe Pro Ile Thr Thr Lys
 1 5 10 15
 Thr Gln Ser Asn Leu Ile Asn Asn Lys Leu Met Lys Thr Asn Leu Ser
 20 25 30
 Ser Gln Ile Thr Leu Asn Arg Val Ser Pro Arg Tyr Tyr Arg Pro Glu
 35 40 45
 Asn Ala Phe Glu Arg Ser Val Leu Thr Arg Leu Glu Lys Ile Pro Thr
 50 55 60
 Asp Ile Tyr Glu Ser Val Glu Glu Gly Ala Asn His Ile Ala Cys Glu
 65 70 75 80
 Ile Ala Gln Val Ile Arg Asp Lys Gln Lys Ala Gly Arg Phe Cys Val
 85 90 95
 Leu Ala Leu Pro Gly Gly Asn Ser Pro Arg Ser Val Tyr Ala Glu Leu
 100 105 110
 Ile Arg Met His Lys Glu Glu Gly Leu Ser Phe Arg Asn Val Ile Val
 115 120 125
 Phe Asn Met Tyr Glu Tyr Tyr Pro Leu Ser Gln Asp Ala Ile Asn Ser
 130 135 140
 Asn Phe Asn Ala Leu Lys Glu Met Phe Leu Asp His Val Asp Ile Asp
 145 150 155 160
 Lys Gln Asn Ile Phe Thr Pro Asp Gly Thr Ile Ala Lys Asp Thr Ile
 165 170 175
 Phe Glu Tyr Cys Arg Leu Tyr Glu Gln Arg Ile Glu Ser Phe Gly Gly
 180 185 190
 Ile Asp Ile Ala Leu Leu Gly Ile Gly Arg Val Gly Asn Ile Ala Phe
 195 200 205

Asn	Glu	Pro	Gly	Ser	Arg	Leu	Asn	Ser	Thr	Thr	Arg	Leu	Ile	Leu	Leu
210						215					220				
Asp	Ser	Gly	Ser	Arg	Asn	Glu	Ala	Ser	Lys	Ile	Phe	Gly	Thr	Ile	Asp
225					230					235					240
Asn	Thr	Pro	Ile	Ser	Ser	Ile	Thr	Met	Gly	Val	Ala	Thr	Ile	Leu	Ala
				245					250					255	
Ala	Lys	Lys	Ile	Tyr	Leu	Leu	Ala	Trp	Gly	Glu	Glu	Lys	Ala	His	Met
			260					265					270		
Val	Lys	Glu	Cys	Val	Glu	Gly	Asn	Val	Thr	Asp	Thr	Ile	Pro	Ala	Ser
		275					280					285			
Tyr	Leu	Gln	Thr	His	Asn	Asn	Ala	His	Val	Ala	Ile	Asp	Leu	Ser	Ala
290						295					300				
Ala	Ser	Asn	Leu	Thr	Arg	Ile	Gln	Arg	Pro	Trp	Leu	Val	Thr	Ser	Cys
305					310					315					320
Glu	Trp	Asn	Asp	Lys	Leu	Ile	Arg	Ser	Ala	Ile	Val	Trp	Leu	Cys	Gln
				325					330					335	
Leu	Thr	Gly	Lys	Pro	Ile	Leu	Lys	Leu	Thr	Asn	Lys	Asp	Tyr	Asn	Glu
			340					345					350		
Asn	Gly	Leu	Ser	Glu	Leu	Leu	Ala	Leu	Phe	Gly	Ser	Ala	Tyr	Asn	Val
		355					360					365			
Asn	Ile	Lys	Ile	Phe	Asn	Asp	Leu	Gln	His	Thr	Ile	Thr	Gly	Trp	Pro
370						375					380				
Gly	Gly	Lys	Pro	Lys	Ala	Asp	Asp	Thr	Tyr	Arg	Pro	Glu	Arg	Ala	Lys
385					390					395					400
Pro	Tyr	Pro	Lys	Arg	Val	Val	Val	Phe	Ser	Pro	His	Pro	Asp	Asp	Asp
				405					410					415	
Val	Ile	Ser	Met	Gly	Gly	Thr	Ile	Arg	Arg	Leu	Val	Glu	Gln	Lys	His
			420					425					430		
Glu	Val	His	Val	Ala	Tyr	Gln	Thr	Ser	Gly	Asn	Ile	Ala	Val	Gly	Asp
		435					440					445			
Glu	Glu	Val	Val	Arg	Phe	Met	His	Phe	Ile	Asn	Gly	Phe	Asn	Gln	Ile
		450				455					460				
Phe	Ile	Asn	Ser	Glu	Asp	Gln	Val	Ile	Ser	Glu	Lys	Tyr	Ala	Glu	Ile
465					470					475					480
Arg	Lys	Phe	Leu	Lys	Asp	Lys	Lys	Asp	Gly	Asp	Met	Asp	Thr	Arg	Asp
				485					490					495	
Ile	Leu	Thr	Ile	Lys	Gly	Leu	Ile	Arg	Arg	Gly	Glu	Ala	Arg	Thr	Ala
			500					505					510		
Cys	Thr	Tyr	Asn	Asn	Ile	Pro	Leu	Glu	Arg	Cys	His	Phe	Leu	Asp	Leu
		515					520					525			
Pro	Phe	Tyr	Glu	Thr	Gly	Lys	Ile	Gln	Lys	Asn	Pro	Ile	Ser	Glu	Ala
		530				535					540				
Asp	Val	Glu	Ile	Val	Arg	Asn	Leu	Leu	Arg	Glu	Val	Lys	Pro	His	Gln
545					550					555					560
Ile	Phe	Val	Ala	Gly	Asp	Leu	Ala	Asp	Pro	His	Gly	Thr	His	Arg	Val
				565					570					575	
Cys	Thr	Asp	Ala	Val	Phe	Ala	Ala	Val	Asp	Leu	Glu	Lys	Glu	Glu	Gly
			580					585					590		
Ala	Glu	Trp	Leu	Lys	Asp	Cys	Arg	Ile	Trp	Met	Tyr	Arg	Gly	Ala	Trp
		595					600					605			
Ala	Glu	Trp	Glu	Ile	Glu	Asn	Ile	Glu	Met	Ala	Val	Pro	Ile	Ser	Pro
		610				615					620				
Glu	Glu	Leu	Arg	Ala	Lys	Arg	Asn	Ser	Ile	Leu	Lys	His	Gln	Ser	Gln
625					630					635					640
Met	Glu	Ser	Ala	Pro	Phe	Leu	Gly	Asn	Asp	Glu	Arg	Leu	Phe	Trp	Gln
				645					650					655	
Arg	Ser	Glu	Asp	Arg	Asn	Arg	Gly	Thr	Ala	Ala	Leu	Tyr	Asp	Ser	Leu
			660					665					670		
Gly	Leu	Ala	Ser	Tyr	Glu	Ala	Met	Glu	Ala	Phe	Val	Glu	Tyr	Ile	Pro

675

680

685

Leu

<210> 6383
 <211> 204
 <212> PRT
 <213> B.fragilis

<400> 6383

Trp	Ala	Lys	Ile	Ala	Phe	Met	Thr	Ile	Thr	Glu	Leu	Gln	His	Gln	Tyr
1				5					10					15	
Ala	Gly	His	Pro	Asn	Val	Glu	Ala	Leu	Asn	Lys	Leu	Leu	Gly	Glu	Pro
			20					25					30		
Ala	Val	Arg	His	Ile	Tyr	Cys	Gly	Gly	Leu	Tyr	Ala	Ser	Ala	Ala	Ser
		35					40					45			
Leu	Phe	Ala	Ser	Ala	Leu	Val	Glu	Lys	Ser	Pro	Cys	Pro	Phe	Val	Phe
	50					55					60				
Ile	Leu	Gly	Asp	Leu	Glu	Glu	Ala	Gly	Tyr	Phe	Tyr	His	Asp	Leu	Thr
65					70					75				80	
Gln	Val	Leu	Gly	Thr	Glu	Arg	Ile	Leu	Phe	Phe	Pro	Ser	Ser	Phe	Arg
				85					90					95	
Arg	Ser	Val	Lys	Tyr	Gly	Gln	Lys	Asp	Ala	Ala	Asn	Glu	Ile	Leu	Arg
			100					105						110	
Thr	Glu	Val	Leu	Ser	Arg	Leu	Gln	Lys	Gly	Glu	Glu	Gly	Leu	Cys	Ile
		115					120					125			
Val	Thr	Tyr	Pro	Asp	Ala	Leu	Ala	Glu	Lys	Val	Val	Ser	Arg	Gln	Glu
		130				135					140				
Leu	Ser	Glu	Asn	Thr	Leu	Lys	Leu	His	Val	Gly	Glu	Arg	Val	Asp	Thr
145					150					155				160	
Gly	Phe	Ile	Thr	Asp	Val	Leu	His	Ser	Tyr	Gly	Phe	Glu	Tyr	Val	Asp
				165					170					175	
Tyr	Val	Tyr	Glu	Pro	Gly	Pro	Val	Cys	Arg	Ser	Trp	Lys	Tyr	Tyr	Arg
			180					185					190		
Arg	Val	Phe	Ile	Phe	Val	Arg	Val	Ser	Leu	Ser	Tyr				
		195					200								

<210> 6384
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 6384

Leu	Tyr	Lys	Ile	Gly	Ser	Cys	Ser	Thr	Leu	Gln	Met	Ile	Ile	Arg	Ala
1				5					10					15	
Gln	Ile	Ile	Arg	Leu	Glu	Asp	Ser	Ile	Met	Lys	Leu	Glu	Lys	Tyr	Tyr
			20					25					30		
Arg	Thr	Lys	Thr	Ala	Gly	Leu	Glu	Gly	Gln	Pro	Asn	Lys	Lys	Lys	Asn
		35				40						45			
Lys	Arg	Met	Ala	Asp	Ile	Val	Ala	Val	Asn	Val	Lys	Tyr	Val	Leu	Phe
	50					55					60				

Gly
65

<210> 6385
 <211> 642
 <212> PRT
 <213> B.fragilis

<400> 6385

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Leu Tyr Ala Val Gly Ser Ser Ser Ala Leu Ser Val Pro Ser Tyr Ser
1      5      10      15
Glu Ile Ile Arg Ile Phe Val Pro Met Lys Glu Tyr Arg Leu Thr Asp
20      25      30
Trp Leu Pro Thr Thr Lys Lys Glu Val Glu Leu Arg Gly Trp Asp Glu
35      40      45
Leu Asp Val Ile Leu Phe Ser Gly Asp Ala Tyr Val Asp His Pro Ser
50      55      60
Phe Gly Ala Ala Val Ile Gly Arg Ile Leu Glu Ala Glu Gly Leu Arg
65      70      75      80
Val Ala Ile Val Pro Gln Pro Asn Trp Arg Asp Asp Leu Arg Asp Phe
85      90      95
Arg Lys Leu Gly Arg Pro Arg Leu Phe Phe Gly Ile Ser Ala Gly Cys
100     105     110
Met Asp Ser Met Val Asn Lys Tyr Thr Ala Asn Lys Arg Leu Arg Ser
115     120     125
Asp Asp Ala Tyr Thr Pro Asp Gly Arg Pro Asp Met Arg Pro Glu Tyr
130     135     140
Pro Ser Ile Val Tyr Thr Gln Ile Leu Lys Lys Leu Tyr Pro Asp Val
145     150     155     160
Pro Val Val Leu Gly Gly Ile Glu Ala Ser Met Arg Arg Leu Ser His
165     170     175
Tyr Asp Tyr Trp Gln Asp Arg Leu Lys Lys Ser Ile Leu Cys Glu Ser
180     185     190
Gly Ala Asp Met Leu Ile Tyr Gly Met Gly Glu Lys Pro Ile Cys Glu
195     200     205
Leu Val Arg Arg Leu Thr Ala Leu Cys Asp Asn Gln Asp Gly Val Ile
210     215     220
Ser Ser Ser Asp Ile His Ser Pro Ala Leu Ser Ser Ile Pro Gln Thr
225     230     235     240
Ala Tyr Leu Thr Arg Lys Tyr Glu Ser Asp Glu Asn Asp Ile Thr Leu
245     250     255
Tyr Ser His Glu Glu Cys Leu Ala Asp Lys Lys Lys Gln Ala Thr Asn
260     265     270
Phe Arg His Ile Glu Glu Glu Ser Asn Lys Tyr Ala Ala Arg Ile
275     280     285
Val Gln Ala Val Asp Gly Lys Thr Val Val Val Asn Pro Pro Tyr Pro
290     295     300
Pro Met Thr Glu Lys Glu Leu Asp Arg Ser Phe Asp Leu Pro Tyr Thr
305     310     315     320
Arg Leu Pro His Pro Lys Tyr Lys Gly Lys Arg Ile Pro Ala Tyr Asp
325     330     335
Met Ile Lys Phe Ser Val Asn Ile His Arg Gly Cys Phe Gly Gly Cys
340     345     350
Ala Phe Cys Thr Ile Ser Ala His Gln Gly Lys Phe Ile Val Ser Arg
355     360     365
Ser Lys Glu Ser Ile Leu Lys Glu Val Lys Glu Val Val Gln Leu Pro
370     375     380
Asp Phe Lys Gly Asn Leu Ser Asp Leu Gly Gly Pro Ser Ala Asn Met
385     390     395     400
Tyr Lys Met Gly Gly Lys Asp Leu Ser Leu Cys Lys Arg Cys Lys Arg
405     410     415
Pro Ser Cys Ile His Pro Lys Val Cys Pro Asn Leu Asn Thr Asp His
420     425     430
Arg Pro Leu Leu Asp Ile Tyr Tyr Ala Val Asp Ser Leu Pro Glu Ile
435     440     445
Lys Arg Ser Phe Ile Gly Ser Gly Val Arg Tyr Asp Leu Leu Leu His
450     455     460

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Gln Ser Lys Asp Ala Thr Val Asn Lys Ile Thr Ala Glu Tyr Thr Arg
 465 470 475 480
 Glu Leu Ile Ala Arg His Val Ser Gly Arg Leu Lys Val Ala Pro Glu
 485 490 495
 His Thr Ser Asp Arg Val Leu Ser Ile Met Arg Lys Pro Ala Phe Ser
 500 505 510
 Gln Phe Gly Glu Phe Lys Lys Ile Phe Asp Arg Ile Asn Arg Glu Leu
 515 520 525
 Gly Leu Arg Gln Gln Leu Ile Pro Tyr Phe Ile Ser Ser His Pro Gly
 530 535 540
 Cys Lys Glu Glu Asp Met Ala Glu Leu Ala Val Ile Thr Lys Gln Leu
 545 550 555 560
 Asp Phe His Leu Glu Gln Val Gln Asp Phe Thr Pro Thr Pro Met Thr
 565 570 575
 Val Ala Thr Glu Ala Trp Tyr Thr Gly Phe His Pro Tyr Thr Leu Glu
 580 585 590
 Pro Val Phe Ser Ala Lys Thr Gln Arg Glu Lys Leu Ala Gln Arg Gln
 595 600 605
 Phe Phe Phe Trp Tyr Lys Pro Glu Glu Arg Arg Asn Ile Ile Asn Glu
 610 615 620
 Leu Arg Arg Ile Gly Arg Ala Asp Leu Ile Asp Lys Leu Tyr Gly Lys
 625 630 635 640
 Arg Lys

<210> 6386

<211> 226

<212> PRT

<213> B.fragilis

<400> 6386

Leu Pro Val Leu Lys Gln Ser Asn Met Glu Lys His Asn Pro Ser Ser
 1 5 10 15
 Phe Thr Val Asp Ser Ser Ser Pro Ala His Arg Ser Ser Phe Ala Val
 20 25 30
 His Asp Leu Thr Pro Tyr Ile Asn Trp Ile Tyr Phe Phe His Ala Trp
 35 40 45
 Gly Phe Gln Pro Arg Tyr Ala Ala Ile Ala Asn Ile His Gly Cys Asp
 50 55 60
 Ser Cys Arg Ala Ile Trp Leu Thr Thr Phe Pro Glu Glu Glu Arg Ser
 65 70 75 80
 Lys Ala Ser Glu Ala Met Gln Leu Tyr Lys Glu Ala Asn Arg Met Leu
 85 90 95
 Asn Glu Leu Asp Arg Asn Phe Glu Val Lys Thr Ile Phe Lys Leu Cys
 100 105 110
 Pro Ala Asn Ala Asp Gly Asp Asn Leu Ile Ile Asn Gly Ile Thr Phe
 115 120 125
 Pro Leu Leu Arg Gln Gln Val Lys Lys Lys Glu Asn Glu Pro Phe Leu
 130 135 140
 Cys Leu Ser Asp Phe Val Arg Pro Leu Ser Ser Gly Ile Thr Asp Val
 145 150 155 160
 Val Gly Ala Phe Ala Ser Ser Ile Asp Ala Asp Met Glu Gly Leu Tyr
 165 170 175
 Glu Lys Asp Pro Tyr Lys His Leu Leu Val Gln Thr Leu Ser Asp Arg
 180 185 190
 Leu Ala Glu Ala Ala Thr Glu Lys Met His Glu Tyr Val Arg Lys Glu
 195 200 205
 Ala Trp Gly Tyr Ala Lys Asp Glu Asn Leu Ser Ile Pro Asp Val Phe
 210 215 220

Asn Thr
225

<210> 6387
<211> 135
<212> PRT
<213> B.fragilis

<400> 6387

Ala	Val	Gly	Ser	Arg	Arg	Gln	Cys	Leu	Pro	Val	Ser	Lys	Val	Thr	Leu
1				5					10					15	
His	Arg	Tyr	Ile	His	Phe	Ala	Phe	Ile	Glu	Asp	Ala	Ala	Leu	Arg	Thr
			20					25					30		
Ile	Thr	Glu	Glu	Gln	His	Ala	Val	Gly	Gly	Asn	Ser	Asn	Ala	Tyr	His
		35					40					45			
Arg	Ile	Asn	Val	Gly	Ile	Leu	Ile	Val	Asp	Ser	Phe	His	Ser	Gln	Thr
	50					55					60				
Phe	Ser	Asp	Tyr	Ile	Thr	Thr	Gly	Ile	Asp	Asp	Gly	Asp	Ile	Phe	Arg
65					70				75					80	
Met	Arg	His	Tyr	Met	Ile	Lys	Val	Thr	Asp	Thr	Tyr	Leu	Ile	Glu	Gln
				85				90					95		
Asp	Ala	Glu	Asn	Lys	Tyr	Ser	Arg	Arg	Gln	Tyr	Val	Ile	Lys	Tyr	Lys
			100					105					110		
Tyr	Gly	Ser	Pro	Gly	Glu	Gly	Met	Cys	Tyr	Gln	Asn	Arg	Gln	Ala	Asp
		115					120					125			
Asp	Ser	Lys	Met	Glu	Asn	Thr									
	130					135									

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<400> 6388

Ser	Leu	Pro	Ser	Leu	Arg	Asn	Asn	Lys	Lys	Asn	Lys	Lys	Ile	Gly	Arg
1				5				10						15	
Met	Val	Ser	Ala	Asn	Pro	Tyr	Asn	Arg	Tyr	Ile	Cys	Phe	Gln	Ile	Arg
			20					25					30		
Arg	Leu	Arg	Tyr	Met	Glu	Thr	Met	Phe	Asp	Thr	Leu	Leu	Gln	Leu	Pro
		35					40					45			
Leu	Phe	Gln	Gly	Leu	Cys	His	Glu	Asp	Phe	Thr	Asn	Ile	Leu	Glu	Lys
	50					55					60				
Val	Lys	Leu	His	Phe	Thr	Arg	His	Lys	Pro	Gly	Glu	Pro	Leu	Ile	Lys
65					70				75					80	
Ser	Gly	Glu	Val	Cys	Asp	Gln	Leu	Leu	Phe	Leu	Leu	Lys	Gly	Arg	Leu
				85				90					95		
Ser	Ser	Val	Thr	Val	Ser	Glu	Asp	Asp	Thr	Leu	Thr	Val	Ile	Glu	Tyr
			100					105					110		
Phe	Glu	Ala	Pro	Ala	Val	Leu	Glu	Pro	Tyr	Ser	Met	Phe	Gly	Met	Asn
	115					120						125			
Thr	Arg	Tyr	Ile	Ser	Ser	Tyr	Ile	Pro	His	Asn	Glu	Glu	Ala	Gln	Met
	130					135					140				
Val	Ser	Ile	Ser	Lys	Ser	Phe	Val	Met	Gly	Glu	Leu	Phe	Lys	Tyr	Asp
145				150					155					160	
Ile	Phe	Arg	Leu	Asn	Tyr	Met	Asn	Ile	Val	Ser	Asn	Arg	Ala	Gln	Asn
			165					170						175	
Leu	Tyr	Thr	Arg	Leu	Trp	Asp	Lys	Ala	Pro	Lys	Asp	Ile	Glu	Asp	Lys
			180					185					190		
Ile	Ile	Arg	Phe	Ile	Leu	Gly	His	Ile	Glu	Arg	Met	Thr	Gly	Glu	Lys

195	200	205
Leu Phe Lys Val Lys Met Asp Asp Leu Ala Arg Met Leu Asp Asp Thr		
210	215	220
Arg Leu Asn Val Ser Lys Ala Leu Asn Gly Leu Gln Glu Leu Asn Leu		
225	230	235
Leu Glu Leu His Arg Lys Glu Ile Arg Ile Pro Asp Leu Ser Leu Leu		
	245	250
Thr Glu Trp Asn Glu Lys Arg		255
260		

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Leu Ile Trp Phe His Tyr Glu Thr Asp Glu Leu Tyr Ile Cys Arg Leu		
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Asn Leu Lys Ile Glu Pro Tyr Met Lys Tyr Asn Phe Asp Glu Val Ile		
	20	25
Glu Arg Arg Gly Thr Asp Ser Val Lys Tyr Asp Ala Val Ser Glu Arg		
	35	40
Trp Gly Arg Ser Asp Leu Leu Pro Met Trp Val Ala Asp Met Asp Phe		
	50	55
Arg Thr Pro Pro Phe Val Ile Glu Ala Ile Arg Arg Arg Leu Asp His		
	65	70
Glu Val Leu Gly Tyr Thr Phe Ala Cys Glu Ala Trp Tyr Thr Ser Ile		
	85	90
Ile Asn Trp Gln Lys Glu Arg His Gly Trp Asn Val Thr Arg Glu Met		
	100	105
Leu Thr Phe Thr Pro Gly Ile Val Arg Gly Leu Ala Phe Ala Leu Gln		
	115	120
Cys Phe Thr Ala Pro Gly Asp Lys Val Met Val Met Pro Pro Val Tyr		
	130	135
His Pro Phe Phe Leu Val Thr Glu His Asn His Arg Glu Val Val Tyr		
	145	150
Ser Pro Leu Leu Leu Lys Asp Gly Gln Tyr Gln Ile Asp Phe Glu Arg		
	165	170
Phe Arg Ala Asp Val Lys Gly Cys Lys Met Leu Ile Leu Ser Asn Pro		
	180	185
His Asn Pro Gly Gly Arg Val Trp Thr Arg Glu Glu Leu Ala Glu Ile		
	195	200
Ala Glu Ile Cys Phe Asp Asn Gln Val Leu Val Ile Ser Asp Glu Ile		
	210	215
His Ala Asp Leu Thr Leu Pro Gly Tyr Thr His Pro Thr Phe Ala Leu		
	225	230
Val Ser Glu Lys Ala Arg Arg Asn Ser Leu Val Phe Met Ser Pro Ser		
	245	250
Lys Ala Phe Asn Met Pro Gly Leu Ala Ser Ser Tyr Cys Ile Ile Glu		
	260	265
Asp Glu Ala Ile Arg His Arg Phe Gln Thr Tyr Met Glu Ala Ser Glu		
	275	280
Phe Ser Glu Gly His Leu Phe Ala Tyr Leu Gly Val Ala Ala Ala Tyr		
	290	295
Ser Asn Gly Thr Glu Trp Leu Asp Gln Ala Leu Glu Tyr Ile Gln Glu		
	305	310
Asn Ile Asp Phe Thr Asp Glu Tyr Leu Lys Thr His Ile Pro Ala Ile		
	325	330
Arg Met Ile Arg Pro Gln Ala Ser Tyr Leu Ile Phe Leu Asp Cys Arg		

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

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Thr	Ile	Asn	Leu	Thr	Thr	Ser	Ala	Ile	Met	Lys	Lys	Gly	Phe	Lys	Ile
			20					25					30		
Thr	Ala	Ile	Val	Ile	Gly	Val	Ile	Leu	Ile	Leu	Met	Phe	Leu	Leu	Pro
		35					40					45			
Phe	Ala	Phe	Arg	Gly	Lys	Ile	Glu	Gly	Ile	Val	Lys	Ser	Glu	Gly	Asn
	50					55				60					
Lys	Met	Leu	Asn	Gly	His	Phe	Asp	Phe	Ser	Ser	Leu	Asp	Ile	Ser	Leu
65					70					75					80
Phe	Arg	Asn	Phe	Pro	Lys	Ala	Ser	Val	Thr	Leu	Asn	Asp	Phe	Trp	Leu
				85					90					95	
Lys	Gly	Thr	Gly	Glu	Phe	Glu	Asn	Asp	Thr	Leu	Val	Lys	Ala	Gly	Glu
			100					105					110		
Val	Thr	Ala	Ala	Ile	Asn	Leu	Phe	Ser	Leu	Phe	Gly	Asp	Asp	Gly	Tyr
		115					120					125			
Asp	Val	Ser	Lys	Val	Ser	Val	Glu	Asn	Thr	Arg	Leu	His	Ala	Ile	Val
	130					135					140				
Leu	Pro	Asp	Gly	Lys	Ala	Asn	Trp	Asp	Ile	Met	Lys	Pro	Asp	Ser	Ser
145					150					155					160
Thr	Ala	Ser	Glu	Thr	Gln	Glu	Ser	Gly	Glu	Ser	Ser	Thr	Phe	Arg	Ile
				165					170					175	
Lys	Leu	Gln	Arg	Phe	Val	Ile	Lys	Asn	Met	Asn	Val	Val	Tyr	Asp	Asp
			180					185					190		
Arg	Gln	Ser	Ala	Met	Tyr	Ala	Asp	Ile	His	Asn	Phe	Asn	Ala	Leu	Cys
		195					200				205				
Ser	Gly	Asp	Leu	Gly	Ser	Asp	Gln	Thr	Leu	Leu	Ser	Leu	Glu	Ala	Glu
	210					215					220				
Thr	Glu	Ala	Leu	Thr	Tyr	Lys	Met	Asn	Gly	Ile	Pro	Phe	Leu	Ser	Gln
225					230					235					240
Ala	Asn	Val	Tyr	Ala	Lys	Met	Asp	Val	Asp	Ala	Asp	Leu	Ala	His	Asn
				245					250					255	
Lys	Phe	Thr	Leu	Lys	Lys	Asn	Glu	Phe	Arg	Leu	Asn	Ala	Ile	Lys	Ala
			260					265					270		
Gly	Ile	Asp	Gly	Trp	Ile	Glu	Leu	Lys	Asp	Pro	Ala	Ile	Asp	Met	Asp
		275					280					285			
Leu	Lys	Leu	Asn	Thr	Ser	Glu	Ile	Gly	Phe	Lys	Glu	Ile	Leu	Ser	Leu
	290					295					300				
Ile	Pro	Ala	Ile	Tyr	Ser	Lys	Glu	Phe	Lys	Asn	Leu	Lys	Thr	Asp	Gly
305					310					315					320
Thr	Ala	Thr	Leu	Glu	Ala	Thr	Ala	Lys	Gly	Ile	Leu	Gln	Gly	Asp	Thr

325					330					335						
Val	Pro	Gln	Phe	Asp	Val	Arg	Leu	Ala	Val	Lys	Asn	Ala	Met	Phe	Arg	
340					345					350						
Tyr	Pro	Ser	Leu	Pro	Ala	Gly	Val	Asp	Gln	Ile	Asn	Ile	Asp	Ala	Gln	
355					360					365						
Val	Arg	Asn	Pro	Gly	Gly	Asn	Ile	Asp	Leu	Thr	Glu	Ile	Ser	Ile	His	
370					375					380						
Pro	Phe	Ser	Phe	Arg	Leu	Ala	Glu	Asn	Pro	Phe	Ser	Leu	Thr	Ala	Asp	
385					390					395					400	
Ile	Lys	Thr	Pro	Val	Ser	Asp	Pro	Asp	Phe	Thr	Ala	Glu	Ala	Lys	Gly	
405					410					415						
Val	Leu	Asn	Leu	Gly	Met	Ile	Lys	Gln	Val	Tyr	Pro	Leu	Asp	Asp	Met	
420					425					430						
Glu	Leu	Asn	Gly	Thr	Val	Arg	Ala	Asp	Met	Thr	Met	Ala	Gly	His	Leu	
435					440					445						
Ser	Tyr	Ile	Glu	Lys	Glu	Gln	Tyr	Asp	Arg	Phe	Ser	Ala	Ser	Gly	Thr	
450					455					460						
Ile	Ala	Leu	Ser	Asp	Met	Asn	Leu	Lys	Met	Lys	Glu	Met	Pro	Asp	Ile	
465					470					475					480	
Glu	Ile	Lys	Lys	Ser	Leu	Phe	Thr	Phe	Thr	Pro	Lys	Tyr	Leu	Gln	Leu	
485					490					495						
Ser	Glu	Thr	Thr	Val	Ala	Ile	Gly	Lys	Asn	Asp	Leu	Thr	Ala	Asp	Cys	
500					505					510						
Arg	Phe	Glu	Asn	Tyr	Met	Gly	Tyr	Ala	Leu	Lys	Gly	Gly	Thr	Leu	Lys	
515					520					525						
Gly	Thr	Leu	Asn	Val	Arg	Ser	Asn	His	Leu	Asn	Leu	Asn	Asp	Phe	Met	
530					535					540						
Thr	Ala	Thr	Thr	Asp	Ser	Ala	Ala	Gln	Thr	Ser	Gln	Ala	Ser	Ser	Thr	
545					550					555					560	
Glu	Glu	Thr	Ala	Ser	Met	Ile	Glu	Val	Pro	Gln	Asn	Ile	Asp	Phe	Gln	
565					570					575						
Met	Asp	Ala	Gly	Leu	Lys	Glu	Val	Leu	Phe	Asp	Lys	Met	Thr	Phe	Thr	
580					585					590						
Asn	Met	Asn	Gly	Lys	Leu	Ile	Val	Lys	Asp	Gly	Lys	Val	Asp	Met	Thr	
595					600					605						
Asn	Leu	Ser	Met	Asn	Thr	Met	Gly	Gly	Ser	Val	Val	Met	Asn	Gly	Tyr	
610					615					620						
Tyr	Ser	Thr	Ala	Asp	Pro	Lys	Lys	Pro	Glu	Met	Asn	Ala	Gly	Phe	Arg	
625					630					635					640	
Met	Glu	Asn	Ile	Gly	Phe	Ala	Gln	Ala	Tyr	Lys	Ala	Leu	Asp	Met	Val	
645					650					655						
Gln	Gln	Met	Ala	Pro	Ile	Phe	Glu	Asn	Leu	Lys	Gly	Asn	Phe	Ser	Gly	
660					665					670						
Asn	Met	His	Ile	Arg	Thr	Leu	Leu	Asp	Asn	Gln	Met	Ser	Pro	Val	Met	
675					680					685						
Asp	Thr	Met	Gln	Gly	Asn	Gly	Ser	Leu	Ser	Thr	Gln	Asp	Leu	Ser	Leu	
690					695					700						
Ser	Gly	Val	Lys	Val	Ile	Asp	Gln	Ile	Ala	Glu	Ala	Val	Lys	Lys	Pro	
705					710					715					720	
Glu	Leu	Lys	Glu	Met	Lys	Val	Lys	Asp	Met	Ala	Leu	Asp	Phe	Thr	Ile	
725					730					735						
Lys	Asp	Gly	Arg	Val	Ser	Thr	Lys	Pro	Phe	Asp	Ile	Lys	Leu	Gly	Asp	
740					745					750						
Tyr	Val	Met	Asn	Leu	Ser	Gly	Ser	Thr	Gly	Leu	Asp	Gln	Thr	Ile	Asp	
755					760					765						
Tyr	Ser	Gly	Lys	Ile	Lys	Leu	Pro	Ala	Ser	Ala	Gly	Asp	Ile	Ala	Lys	
770					775					780						
Leu	Thr	Thr	Leu	As												

Val	Ser	Leu	Asp	Thr	Lys	Ser	Met	Thr	Asn	Gln	Ala	Val	Glu	Ala	Val
				805					810					815	
Thr	Asp	Lys	Ala	Ile	Ser	Glu	Ile	Gly	Lys	Lys	Leu	Gly	Leu	Asp	Ser
			820					825					830		
Ala	Thr	Thr	Ala	Asn	Lys	Asp	Ser	Val	Lys	Glu	Lys	Val	Lys	Glu	Lys
		835					840					845			
Ala	Val	Glu	Lys	Ala	Leu	Asp	Phe	Leu	Lys	Lys	Lys	Ile	Lys		
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<212> PRT

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Met	Glu	Lys	Thr	Lys	Arg	Asp	Ser	Arg	His	Ile	Asp	Pro	Leu	Lys	Asp
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Glu	Glu	Lys	Phe	Phe	Gln	Trp	Leu	Lys	Phe	Lys	Ser	Val	Arg	Met	Asn
			20					25					30		
Gln	Glu	His	Leu	Ser	Lys	Asp	Asp	Tyr	Glu	Arg	Leu	Arg	Gln	Arg	Ile
		35				40						45			
His	Val	Ser	Leu	Arg	Met	Leu	Arg	Arg	Lys	Arg	Thr	Val	Arg	Arg	Val
	50					55					60				
Ala	Tyr	Tyr	Gly	Val	Ser	Val	Cys	Val	Ile	Ile	Ala	Leu	Gly	Ile	Val
65					70				75					80	
Ala	Tyr	Leu	Asn	His	Tyr	Glu	Arg	Val	Glu	Pro	Val	Pro	Ser	Val	Val
				85					90					95	
Glu	Lys	Lys	Ala	Glu	Ile	Val	Trp	Gln	Pro	Leu	Lys	Ser	Glu	Asp	Ile
			100					105					110		
Arg	Leu	Val	Ser	Gly	Asp	Ser	Ile	Thr	Ser	Phe	Arg	Gln	Asn	Val	Gln
		115				120						125			
Leu	Leu	Leu	Ser	Lys	Asp	Gly	Ser	Ala	Met	Val	Tyr	His	Pro	Asn	Ser
	130					135					140				
Gly	Gln	Lys	Arg	Ile	Arg	Met	Glu	Gln	Asp	Glu	Val	Asn	Glu	Leu	Val
145					150					155				160	
Val	Pro	Tyr	Gly	Lys	Arg	Ser	Lys	Val	Lys	Leu	Glu	Asp	Gly	Thr	Glu
				165					170					175	
Ile	Trp	Leu	Asn	Ser	Gly	Ser	Val	Leu	Lys	Phe	Pro	Thr	His	Phe	Ser
		180						185					190		
Gly	Glu	Lys	Arg	Glu	Val	Ser	Leu	Lys	Gly	Glu	Met	Tyr	Ala	Glu	Val
		195					200					205			
Thr	Ala	Asp	Ser	Lys	Lys	Pro	Phe	Ile	Val	His	Thr	Ala	His	Phe	Asp
	210					215					220				
Ile	Gln	Val	Tyr	Gly	Thr	Arg	Phe	Asn	Ile	Ser	Ala	Tyr	Glu	Asp	Glu
225					230					235				240	
Pro	Thr	Pro	Ser	Cys	Val	Leu	Val	Asp	Gly	Ile	Val	Gly	Phe	Arg	Pro
				245					250					255	
Glu	Ser	Gly	Pro	Glu	Ile	Arg	Met	Lys	Thr	Asn	Glu	Lys	Val	Leu	Tyr
			260					265					270		
Asp	Gly	Lys	Arg	Phe	Glu	Lys	Arg	Lys	Val	Ser	Ala	Ser	Arg	Tyr	Thr
		275					280					285			
Cys	Trp	Lys	Glu	Gly	Tyr	Leu	Glu	Leu	Asp	Asp	Ala	Asn	Ile	Met	Asp
	290					295					300				
Val	Leu	Asn	Arg	Ile	Gly	Arg	Tyr	Tyr	Asn	Leu	Ser	Phe	Ser	Phe	Gly
305					310					315				320	
Asp	Lys	Lys	Arg	Leu	Thr	Gly	Arg	Lys	Cys	Ser	Gly	Lys	Ile	Tyr	Leu
				325					330					335	
Ser	Asp	Asn	Ile	Asp	Asn	Val	Leu	Thr	Thr	Ile	Ser	Leu	Leu	Tyr	Ser
			340					345					350		

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 Asn Ala Gly Phe Thr Cys Pro Asn Arg Asp Gly Thr Lys Gly Leu Gly
 35 40 45
 Gly Cys Thr Tyr Cys Asn Asn Gln Thr Phe Asn Pro Glu Tyr Cys Lys
 50 55 60
 Thr Glu Lys Ser Val Thr Arg Gln Leu Glu Glu Gly Lys Gln Phe Phe
 65 70 75 80
 Ala His Lys Tyr Pro Asp Met Lys Tyr Leu Ala Tyr Phe Gln Ala Tyr
 85 90 95
 Thr Asn Thr Tyr Ala Glu Leu Glu Gly Leu Lys Gly Lys Tyr Glu Glu
 100 105 110
 Ala Leu Ser Val Asp Gly Val Val Gly Leu Val Ile Gly Thr Arg Pro
 115 120 125
 Asp Cys Met Pro Asp Pro Leu Leu Arg Tyr Leu Glu Glu Leu Asn Lys
 130 135 140
 His Thr Phe Leu Leu Val Glu Tyr Gly Ile Glu Thr Thr Arg Asp Val
 145 150 155 160
 Thr Leu Lys Arg Ile Asn Arg Gly His Thr Tyr Ala Asp Thr Val Glu
 165 170 175
 Thr Val Asn Arg Thr Ala Ala Cys Gly Ile Leu Thr Gly Gly His Val
 180 185 190
 Ile Leu Gly Leu Pro Gly Glu Thr His Asp Glu Ile Ile Ala Gln Ala
 195 200 205
 Ala Glu Leu Ser Arg Leu Pro Leu Thr Thr Leu Lys Met His Gln Leu
 210 215 220
 Gln Leu Ile Arg Gly Thr Lys Met Ala Arg Glu Phe Glu Cys Arg Pro
 225 230 235 240
 Glu Asp Phe His Leu Phe Ser Val Asp Glu Tyr Ile Asp Leu Val Ile
 245 250 255
 Asp Tyr Val Glu His Leu Arg Pro Asp Leu Ile Leu Glu Arg Phe Val
 260 265 270
 Ser Gln Ser Pro Lys Glu Leu Leu Ile Ala Pro Asp Trp Gly Leu Lys
 275 280 285
 Asn Tyr Glu Phe Thr Ala Arg Val Gln Lys Arg Met Lys Glu Arg Gly
 290 295 300
 Ala Tyr Gln Gly Lys Ala Tyr Leu Val
 305 310

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Lys Gln Tyr Tyr Met Gly Asn Asp Lys Arg Val Arg Lys Pro Glu Trp
 1 5 10 15
 Leu Lys Ile Ser Ile Gly Ala Asn Glu Arg Tyr Thr Glu Thr Lys Arg

	20		25		30
Ile Val Glu Ser His Cys Leu His Thr Ile Cys Ser Ser Gly Arg Cys					
	35		40		45
Pro Asn Met Gly Glu Cys Trp Gly Lys Gly Thr Ala Thr Phe Met Ile					
	50		55		60
Ala Gly Asp Ile Cys Thr Arg Ser Cys Lys Phe Cys Asn Thr Gln Thr					
65		70		75	80
Gly Arg Pro Leu Pro Leu Asp Pro Asp Glu Pro Ala His Val Ala Glu					
	85		90		95
Ser Ile Ala Leu Met Lys Leu Ser His Ala Val Ile Thr Ser Val Asp					
	100		105		110
Arg Asp Asp Leu Pro Asp Leu Gly Ala Ala His Trp Ala Gln Thr Ile					
	115		120		125
Arg Glu Ile Lys Arg Leu Asn Pro Glu Thr Thr Thr Glu Val Leu Ile					
	130		135		140
Pro Asp Phe Gln Gly Arg Lys Glu Leu Ile Asp Gln Val Ile Lys Ala					
145		150		155	160
Cys Pro Glu Ile Ile Ser His Asn Met Glu Thr Val Lys Arg Ile Ser					
	165		170		175
Pro Gln Val Arg Ser Ala Ala Asn Tyr His Thr Ser Leu Glu Val Ile					
	180		185		190
Arg Gln Ile Ala Glu Ser Gly Ile Thr Ala Lys Ser Gly Ile Met Val					
	195		200		205
Gly Leu Gly Glu Thr Pro Ala Glu Val Glu Glu Leu Met Asp Asp Leu					
	210		215		220
Ile Ser Val Gly Cys Lys Ile Leu Thr Ile Gly Gln Tyr Leu Gln Pro					
225		230		235	240
Thr His Lys His Phe Pro Val Ala Ala Tyr Ile Thr Pro Glu Gln Phe					
	245		250		255
Ala Val Tyr Lys Glu Thr Gly Leu Lys Lys Gly Phe Glu Gln Val Glu					
	260		265		270
Ser Ala Pro Leu Val Arg Ser Ser Tyr His Ala Glu Lys His Ile Arg					
	275		280		285
Phe Asn Asn Lys					
	290				

<210> 6394

<211> 149

<212> PRT

<213> B.fragilis

<400> 6394

Gln Leu Glu Gln Ser Met Lys Arg Glu Arg Ile Val Arg Thr Glu Asn					
1		5		10	15
Ile Asp Arg Gln Arg Ile Lys Tyr Arg Val Leu Phe Gly Phe Ile Phe					
	20		25		30
Ile Met Cys Cys Asn Gly Ala Ala Leu Pro Ser Glu Asp Gly Lys Met					
	35		40		45
Pro Asp Trp Lys Phe Ser Phe Ser Leu Lys Arg Ile Pro Met Ile Arg					
	50		55		60
Ile Phe Asp Glu Ile Glu Gln Lys Ser Asp Phe Val Phe Ala Trp Ser					
65		70		75	80
Cys Asp Ile Asp Asn Glu Ile His Glu Glu Ile Ser Ile Cys Val Thr					
	85		90		95
Glu Glu Pro Ile Gln Lys Val Met Glu Lys Val Leu Lys Gly Ser Gly					
	100		105		110
Leu Val Tyr Gln Arg Leu Asp Arg Gln Ile Val Val Tyr Arg Leu Leu					
	115		120		125
Gly His Asn Ala Cys Arg Val Asp Ser Val Arg Val Met Thr Asn Met					

130
Glu Gln Asn Asp Arg
145

135

140

<210> 6395
<211> 364
<212> PRT
<213> B.fragilis

<400> 6395

Val	Cys	Val	Gln	Trp	Leu	Leu	Thr	Lys	Arg	Gly	Trp	Thr	Asn	Ile	Lys
1				5					10					15	
Thr	Lys	Thr	Val	Ile	Ser	Phe	Thr	Val	Lys	Val	Met	Lys	Ile	Arg	Lys
			20					25					30		
Asp	Asp	Ile	Leu	Leu	Ile	Leu	Leu	Ser	Leu	Leu	Phe	Ala	Asp	Cys	Arg
		35					40					45			
Val	Gly	Lys	Ala	Glu	Pro	Val	Ala	Asp	Pro	Met	Glu	Glu	Glu	Gly	Ile
	50					55				60					
Ser	Val	Val	Arg	Tyr	Asp	Lys	Leu	Leu	Asp	Glu	Tyr	Val	Arg	Phe	Asn
65					70				75						80
Ser	Phe	Ser	Ala	Leu	Gln	Lys	Met	Asn	Leu	Glu	Tyr	Ala	Leu	Pro	Thr
				85					90					95	
Lys	Leu	Leu	Ile	Glu	Asp	Val	Leu	Ala	Ile	Gly	Gln	Val	Ser	Asp	Asp
			100					105					110		
His	Ile	Phe	Gln	Arg	Leu	Lys	Thr	Phe	Tyr	Ser	Asp	Thr	Thr	Leu	Val
		115					120					125			
Arg	Leu	Ile	Glu	Asp	Val	Glu	Ala	Lys	Tyr	Pro	Glu	Leu	Glu	Ser	Val
	130					135					140				
Glu	Lys	Asn	Leu	Thr	Lys	Gly	Phe	Gly	Lys	Leu	Gln	Lys	Glu	Ile	Pro
145					150					155					160
Asp	Ile	Met	Ile	Pro	Met	Ile	Tyr	Thr	Gln	Ile	Ser	Ala	Phe	Asn	Glu
				165					170					175	
Ser	Ile	Val	Leu	Ser	Asp	Ser	Val	Leu	Gly	Ile	Ser	Leu	Asp	Lys	Tyr
		180					185					190			
Met	Gly	Glu	Asp	Tyr	Pro	Leu	Tyr	Lys	Arg	Phe	Tyr	Tyr	Asn	Tyr	Gln
	195					200						205			
Arg	Arg	Thr	Met	Arg	Pro	Asp	Arg	Ile	Val	Pro	Asp	Cys	Leu	Val	Phe
	210					215					220				
Tyr	Leu	Met	Ser	Gln	Tyr	Pro	Phe	Pro	Met	Asp	Tyr	Ser	Arg	Thr	Leu
225					230					235					240
Leu	Asp	Val	Met	Met	His	Tyr	Gly	Lys	Ile	Asn	Tyr	Val	Val	Gln	His
				245					250					255	
Leu	Leu	Asp	Tyr	Ser	Ser	Ser	Glu	Glu	Ala	Leu	Gly	Tyr	Ser	Asp	Leu
		260					265					270			
Glu	Arg	Glu	Trp	Cys	Lys	Glu	Asn	Gln	Gln	Gln	Met	Trp	Arg	Tyr	Ile
		275					280					285			
Leu	Glu	Gln	Asp	His	Leu	His	Ala	Thr	Asp	Pro	Met	Val	Val	Arg	Gln
	290					295					300				
Tyr	Thr	Arg	Pro	Ala	Pro	Phe	Thr	Asn	Thr	Leu	Gly	Glu	Asn	Ala	Pro
305					310					315					320
Ser	Met	Val	Gly	Thr	Trp	Ile	Gly	Thr	Lys	Ile	Ile	Thr	Ser	Tyr	Met
			325						330					335	
Lys	His	His	Lys	Lys	Thr	Thr	Leu	Arg	Gln	Leu	Leu	Glu	Met	Ser	Asp
			340					345					350		
Tyr	Glu	Arg	Met	Phe	Thr	Glu	Ser	Arg	Phe	Asn	Pro				
	355						360								

<210> 6396
<211> 85

<212> PRT
 <213> B.fragilis

<400> 6396

Tyr	Arg	His	Lys	Asn	Lys	Glu	Glu	Asp	Arg	Pro	Glu	Glu	Leu	Leu	Ala
1				5					10					15	
Tyr	Pro	Leu	Leu	Phe	Ile	Ser	Leu	Thr	Arg	Lys	Ser	Val	Glu	Glu	Leu
			20					25					30		
Ile	Phe	Gln	Thr	Val	Phe	Asp	Pro	Phe	His	Cys	Phe	Leu	Thr	Phe	Phe
		35					40					45			
Ser	Ser	Leu	Leu	Arg	Thr	Phe	Phe	Tyr	Val	Phe	Gly	Cys	Ile	Phe	Gly
	50					55					60				
Cys	Ile	Phe	Asp	Phe	Leu	Lys	Cys	Ile	Phe	Gly	Ala	Phe	Phe	His	Val
65					70					75					80
Ile	Ser	Tyr	Phe	Leu											
				85											

<210> 6397

<211> 904

<212> PRT

<213> B.fragilis

<400> 6397

Cys	Met	Thr	Lys	Lys	Ile	Asn	Leu	Phe	Pro	Ser	Leu	Ile	Arg	Phe	Arg
1				5					10					15	
Glu	Thr	Asn	Arg	Leu	Lys	Met	Ala	Ile	Ala	Ala	Ser	Ile	Met	Leu	Trp
			20					25					30		
Cys	Met	Ala	Pro	Gln	Gln	Ala	Val	Ala	Asp	Thr	Tyr	Glu	Lys	His	Glu
		35					40					45			
Val	Ala	Ser	Ile	Gln	Gln	Gln	Lys	Val	Lys	Ala	Asn	Gly	Thr	Val	Val
	50					55					60				
Asp	Gln	Thr	Gly	Glu	Pro	Leu	Ile	Gly	Val	Ser	Val	Lys	Val	Lys	Asp
65					70				75						80
Ala	Pro	Asn	Gly	Thr	Ile	Thr	Asn	Leu	Asp	Gly	Lys	Phe	Ser	Ile	Asp
				85					90					95	
Val	Ala	Lys	Gly	Ala	Thr	Leu	Glu	Ile	Ser	Tyr	Val	Gly	Tyr	Lys	Thr
		100						105					110		
Val	Ile	Val	Lys	Ala	Glu	Ser	Thr	Pro	Met	His	Ile	Val	Leu	Lys	Glu
		115					120					125			
Asp	Ser	Glu	Met	Ile	Asp	Glu	Val	Val	Val	Val	Gly	Tyr	Gly	Ser	Gln
	130					135					140				
Lys	Lys	Val	Asn	Val	Thr	Gly	Ala	Val	Gly	Met	Val	Asn	Ser	Glu	Val
145					150					155					160
Leu	Glu	Ala	Arg	Pro	Val	Gln	Asn	Val	Ser	Gln	Ala	Leu	Gln	Gly	Val
				165					170					175	
Val	Pro	Gly	Leu	Asn	Leu	Ser	Val	Asn	Asn	Gly	Gly	Gly	Ser	Leu	Asp
			180					185					190		
Ser	Glu	Met	Ser	Ile	Asn	Ile	Arg	Gly	Thr	Gly	Thr	Ile	Gly	Asp	Gly
	195						200					205			
Ser	Gly	Ser	Ser	Pro	Leu	Val	Leu	Ile	Asp	Gly	Ile	Glu	Gly	Ser	Leu
	210					215					220				
Asn	Thr	Val	Asn	Pro	Asn	Asp	Ile	Glu	Ser	Val	Ser	Val	Leu	Lys	Asp
225					230					235					240
Ala	Ala	Ser	Ala	Ser	Ile	Tyr	Gly	Ala	Arg	Ala	Ala	Phe	Gly	Val	Val
				245					250					255	
Leu	Val	Lys	Thr	Lys	Ser	Gly	Gln	Ser	Gly	Lys	Pro	Arg	Val	Thr	Tyr
		260					265						270		
Ser	Gly	Asn	Val	Arg	Phe	Ser	Asp	Ala	Thr	Asn	Ile	Pro	Glu	Met	Leu
		275					280					285			

Asp	Ser	Tyr	Thr	Phe	Ala	Gln	Tyr	Phe	Asn	Arg	Ala	Ala	Ala	Asn	Asp
290						295					300				
Asn	Gly	Gly	Thr	Val	Phe	Ser	Lys	Glu	Gln	Leu	Glu	Arg	Ile	Lys	Ala
305					310					315					320
Tyr	Gln	Asp	Gly	Thr	Leu	Lys	Ser	Ser	Ala	Thr	Phe	Asn	Glu	Gln	Ser
				325					330					335	
Arg	Arg	Trp	Asn	Tyr	Tyr	Thr	Gly	Ser	Asn	Ala	Asn	Thr	Asp	Trp	Phe
			340					345					350		
Lys	Glu	Val	Tyr	Glu	Asp	Trp	Val	Pro	Ser	Met	Asp	His	Asn	Leu	Ser
		355					360					365			
Ile	Ser	Gly	Gly	Thr	Asp	Lys	Thr	Gln	Tyr	Ile	Val	Ser	Gly	Ser	Phe
	370					375					380				
Leu	Asp	Gln	Lys	Gly	Leu	Ile	Arg	His	Gly	Lys	Asp	Thr	Phe	Gln	Arg
385					390					395					400
Tyr	Thr	Leu	Asn	Gly	Arg	Ile	Thr	Ser	Asn	Ile	Thr	Asp	Trp	Phe	Thr
				405					410					415	
Leu	Gly	Tyr	Ser	Thr	Lys	Trp	Thr	Arg	Glu	Asp	Tyr	Asp	Arg	Pro	Ser
			420					425					430		
Tyr	Leu	Thr	Gly	Leu	Phe	Phe	His	Asn	Val	Ala	Arg	Arg	Trp	Pro	Thr
		435					440						445		
Val	Pro	Val	Tyr	Asp	Asp	Asn	Gly	Tyr	Leu	Thr	Glu	Pro	Ser	Glu	Leu
		450				455					460				
Ile	Gln	Leu	Glu	Asp	Gly	Gly	Arg	Gln	Ile	Asn	Gln	Lys	Asp	Leu	Phe
465					470					475					480
Thr	Gln	Gln	Leu	Gln	Leu	Thr	Phe	Glu	Pro	Ile	Lys	Asn	Trp	Lys	Ile
				485					490					495	
Tyr	Val	Glu	Gly	Ser	Leu	Arg	Val	Thr	Ala	Asn	Asn	Gln	His	Trp	Glu
			500					505					510		
Val	Leu	Pro	Val	Tyr	Gln	His	Asp	Val	Asp	Gly	Asn	Pro	Val	Gly	Met
		515					520					525			
Thr	Trp	Asp	Ala	Gly	Val	Gly	Ser	Tyr	Pro	Val	Gly	Gly	Ser	Lys	Val
		530				535					540				
Ser	Glu	Tyr	Ala	Tyr	Lys	Glu	Asn	Tyr	Tyr	Ser	Thr	Asn	Ile	Tyr	Ser
545					550					555					560
Asp	Tyr	Phe	Lys	Gln	Leu	Asp	Asn	Gly	His	Tyr	Phe	Lys	Ala	Met	Val
			565						570					575	
Gly	Phe	Asn	Ala	Glu	Leu	Tyr	Lys	Asp	Arg	Ser	Val	Ser	Ala	Asp	Lys
			580					585					590		
Ser	Thr	Leu	Ile	Thr	Pro	Ser	Val	Pro	Thr	Ile	Asn	Thr	Ala	Val	Gly
		595					600					605			
Glu	Pro	Ser	Val	Ala	Gly	Gly	Tyr	Arg	His	Thr	Ser	Val	Ala	Gly	Phe
		610				615					620				
Phe	Ala	Arg	Leu	Asn	Trp	Asn	Tyr	Lys	Asp	Arg	Tyr	Met	Leu	Glu	Ala
625					630					635					640
Asn	Gly	Arg	Tyr	Asp	Gly	Ser	Ser	Arg	Phe	Ile	Gly	Asp	Lys	Arg	Trp
			645						650					655	
Gly	Phe	Phe	Pro	Ser	Phe	Ser	Gly	Gly	Trp	Asn	Ile	Ala	Arg	Glu	Ala
			660					665					670		
Phe	Phe	Glu	Glu	Thr	Ala	Asn	Lys	Leu	Lys	Ile	Gly	Thr	Leu	Lys	Leu
		675					680					685			
Arg	Ala	Ser	Trp	Gly	Gln	Leu	Gly	Asn	Thr	Asn	Thr	Asn	Glu	Ala	Trp
		690				695					700				
Tyr	Pro	Phe	Tyr	Gln	Thr	Leu	Pro	Gln	Gly	Gln	Asn	Tyr	Gly	Trp	Leu
705					710					715					720
Val	Asn	Gly	Val	Arg	Gln	Asn	Tyr	Ala	Ser	Asn	Pro	Gly	Ile	Val	Ser
			725						730					735	
Ser	Glu	Lys	Thr	Trp	Glu	Thr	Ile	Glu	Thr	Trp	Asp	Ala	Gly	Leu	Asp
			740					745					750		
Trp	Gly	Leu	Phe	Asn	Asn	Arg	Leu	Thr	Gly	Ser	Phe	Asp	Tyr	Phe	Val

755	760	765
Arg Tyr Thr Tyr Asp Met Ile Ala Thr Ala Pro Glu Leu Pro Ser Ile		
770	775	780
Leu Gly Thr Gly Val Pro Lys Ile Asn Asn Ala Asp Met Lys Ser Tyr		
785	790	795
Gly Phe Glu Leu Glu Ile Gly Trp Arg Asp Arg Ile Lys Asn Phe Ser		800
	805	810
Tyr Gly Val Lys Phe Val Leu Ser Asp Ala Gln Gln Lys Ile Leu Lys		815
	820	825
Tyr Asn Asn Pro Asp Lys Ser Leu Ser Asn Pro Tyr Tyr Glu Gly Gln		830
	835	840
Lys Leu Gly Glu Ile Trp Gly Tyr Lys Thr Ile Gly Ile Ala Gln Ser		845
	850	855
Asp Glu Glu Met Asn Leu His Leu Ala Asn Ala Lys Gln Pro Met Gly		860
865	870	875
Gln Lys Trp Ala Ala Gly Asp Ile Met Tyr Ala Asp Leu Asp Asn Ser		880
	885	890
Gly Ser Val Asp Gln Gly Val Phe		895
	900	

<210> 6398

<211> 243

<212> PRT

<213> B.fragilis

<400> 6398

Tyr Met Glu Lys Lys Glu Phe Ser Ser Pro Ala Arg Arg Tyr Gly Lys		
1	5	10
Phe Phe Ile Ala Phe Ile Phe Ile Thr Ala Gly Val Leu Leu Leu Ala		15
	20	25
Arg Asn Leu Gly Trp Ile Ser Tyr Thr Leu Phe Gly Ile Leu Val Ser		30
	35	40
Trp Gln Met Leu Leu Ile Leu Leu Gly Ile Tyr Leu Ile Leu Arg Arg		45
	50	55
Gln Ile Leu Arg Gly Gly Ile Leu Leu Ala Ile Gly Ala Tyr Leu Ile		60
65	70	75
Ser Pro Tyr Leu Glu Trp Met Pro Ala Gly Val His Val Thr Leu Phe		80
	85	90
Pro Ile Val Leu Ile Val Ile Gly Leu Ala Phe Leu Phe Arg Pro Lys		95
	100	105
Arg Ala Arg His Glu Arg Ser His Arg Gly Asn Phe Ala Ser Ser Gln		110
	115	120
Tyr Asn Ser Thr Asp Gly Val Leu His Ser Glu Asn Thr Phe Ser Gly		125
	130	135
Ile Arg Gln Val Val Leu Asp Glu Val Phe Lys Gly Gly Thr Ile Gln		140
145	150	155
Asn Ser Phe Gly Gly Thr Val Ile Asp Leu Arg Arg Thr Thr Leu Pro		160
	165	170
Glu Gly Glu Thr Phe Leu Asp Ile Asp Cys Thr Phe Gly Gly Ile Glu		175
	180	185
Ile Tyr Val Pro Ser Asp Trp Lys Val Val Phe Arg Cys Thr Thr Cys		190
	195	200
Leu Gly Gly Cys Gln Asp Lys Arg Phe Gly Gly Gly Met Ile Asp Gln		205
	210	215
Asn Arg Ile Leu Val Ile Arg Gly Asp Leu Thr Phe Gly Gly Ile Asp		220
225	230	235
Ile Lys Ser		240

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<210> 6399
 <211> 274
 <212> PRT
 <213> B.fragilis

<400> 6399

Lys Gln Ser Asn Met Arg Leu Ile Ile Gln Pro Asp Tyr Gln Ser Val
 1 5 10 15
 Ser Gln Trp Ala Ala His Tyr Val Ala Ala Lys Ile Lys Ala Ala Asn
 20 25 30
 Pro Thr Pro Glu Lys Pro Phe Val Leu Gly Cys Pro Thr Gly Ser Ser
 35 40 45
 Pro Leu Gly Met Tyr Lys Ala Leu Ile Asp Leu Asn Lys Lys Gly Ile
 50 55 60
 Val Ser Phe Gln Asn Val Val Thr Phe Asn Met Asp Glu Tyr Val Gly
 65 70 75 80
 Leu Pro Lys Glu His Pro Glu Ser Tyr Tyr Ser Phe Met Trp Asn Asn
 85 90 95
 Phe Phe Ser His Ile Asp Ile Lys Pro Glu Asn Thr Asn Ile Leu Asn
 100 105 110
 Gly Asn Ala Ala Asp Leu Asp Ala Glu Cys Ala Arg Tyr Glu Glu Lys
 115 120 125
 Ile Lys Ser Tyr Gly Gly Ile Asp Leu Phe Met Gly Gly Ile Gly Pro
 130 135 140
 Asp Gly His Ile Ala Phe Asn Glu Pro Gly Ser Ser Leu Ser Ser Arg
 145 150 155 160
 Thr Arg Gln Lys Thr Leu Thr Thr Asp Thr Ile Ile Ala Asn Ser Arg
 165 170 175
 Phe Phe Asp Asn Asp Ile Asn Lys Val Pro Lys Thr Ser Leu Thr Val
 180 185 190
 Gly Val Gly Thr Val Leu Ser Ala Arg Glu Val Met Ile Ile Val Asn
 195 200 205
 Gly His Asn Lys Ala Arg Ala Leu Tyr His Ala Val Glu Gly Ala Ile
 210 215 220
 Thr Gln Met Trp Thr Ile Ser Ala Leu Gln Met His Glu Lys Gly Ile
 225 230 235 240
 Ile Val Cys Asp Asp Ala Ala Thr Ala Glu Leu Lys Val Gly Thr Tyr
 245 250 255
 Arg Tyr Phe Lys Asp Ile Glu Ala Asp His Leu Asp Pro Gln Ser Leu
 260 265 270
 Leu Lys

<210> 6400
 <211> 320
 <212> PRT
 <213> B.fragilis

<400> 6400

Ser Asn Ser Leu Tyr Phe Leu Trp Phe Ser Ser Phe Leu Cys Thr Leu
 1 5 10 15
 Phe Val Leu Leu Cys Arg Lys Ser Ile Ser Leu Gln Pro Asn Leu Thr
 20 25 30
 Leu Lys Gly Met Ser Tyr Asn Leu Lys Gly Lys Arg Gly Ile Ile
 35 40 45
 Phe Gly Ala Leu Asn Glu Gln Ser Ile Ala Trp Lys Val Ala Glu Arg
 50 55 60
 Ala Val Glu Glu Gly Ala Val Ile Thr Leu Ser Asn Thr Pro Val Ala
 65 70 75 80

Val	Arg	Met	Gly	Gln	Val	Ser	Ala	Leu	Ser	Glu	Lys	Leu	Asn	Cys	Glu
			85						90				95		
Val	Ile	Ala	Ala	Asp	Ala	Thr	Asn	Val	Glu	Asp	Leu	Glu	Asn	Val	Phe
		100						105					110		
Lys	Arg	Ser	Met	Glu	Val	Leu	Gly	Gly	Gln	Ile	Asp	Phe	Val	Leu	His
		115					120					125			
Ser	Ile	Gly	Met	Ser	Pro	Asn	Val	Arg	Lys	Lys	Arg	Thr	Tyr	Asp	Asp
	130					135					140				
Leu	Asp	Tyr	Asn	Met	Leu	Asn	Thr	Thr	Leu	Asp	Val	Ser	Ala	Val	Ser
145					150					155					160
Phe	His	Lys	Met	Ile	Gln	Ala	Ala	Lys	Lys	Gln	Asn	Ala	Ile	Ala	Glu
			165					170						175	
Tyr	Gly	Ser	Ile	Val	Ala	Leu	Ser	Tyr	Val	Ala	Ala	Gln	Arg	Thr	Phe
			180					185					190		
Tyr	Gly	Tyr	Asn	Asp	Met	Ala	Asp	Ala	Lys	Ala	Leu	Leu	Glu	Ser	Ile
		195					200					205			
Ala	Arg	Ser	Phe	Gly	Tyr	Ile	Tyr	Gly	Arg	Glu	His	Asn	Val	Arg	Val
	210					215					220				
Asn	Thr	Ile	Ser	Gln	Ser	Pro	Thr	Phe	Thr	Thr	Ala	Gly	Ser	Gly	Val
225					230					235					240
Lys	Gly	Met	Asp	Lys	Leu	Tyr	Asp	Phe	Ala	Asn	Arg	Met	Ser	Pro	Leu
			245					250						255	
Gly	Asn	Ala	Ser	Ala	Asp	Glu	Cys	Ala	Asp	Tyr	Cys	Ile	Val	Met	Phe
		260						265					270		
Ser	Asp	Leu	Thr	Arg	Lys	Val	Thr	Met	Gln	Asn	Leu	Phe	His	Asp	Gly
		275					280					285			
Gly	Phe	Ser	Ser	Val	Gly	Met	Ser	Leu	Arg	Ala	Met	Ala	Thr	Tyr	Glu
	290					295					300				
Lys	Gly	Leu	Asp	Glu	Tyr	Lys	Asp	Glu	Asn	Gly	Asn	Ile	Ile	Tyr	Gly
305					310					315					320

<210> 6401

<211> 157

<212> PRT

<213> B.fragilis

<400> 6401

Leu	Ala	Ala	Leu	Arg	Thr	Cys	Gly	Leu	Met	Arg	Phe	Thr	Val	Ser	Met
1			5					10						15	
Leu	Trp	Glu	Met	Ile	Ser	Gly	Gln	Ala	Phe	Ile	Thr	Trp	Ser	Ile	Ser
		20					25						30		
Ser	Leu	Arg	Pro	Trp	Lys	Ser	Gly	Ile	Ser	Thr	Ser	Val	Val	Val	Ser
		35					40					45			
Gly	Phe	Ser	Arg	Leu	Ile	Ser	Arg	Ile	Val	Cys	Ala	Gln	Trp	Ala	Ala
	50					55				60					
Pro	Lys	Ser	Gly	Arg	Ser	Ser	Arg	Ser	Thr	Asp	Val	Ile	Thr	Ala	Cys
65					70					75				80	
Glu	Ser	Phe	Ile	Arg	Ala	Ile	Asp	Ser	Ala	Thr	Trp	Ala	Gly	Ser	Ser
			85					90						95	
Gly	Ser	Lys	Gly	Arg	Gly	Arg	Pro	Val	Trp	Val	Leu	Gln	Asn	Leu	Gln
		100						105					110		
Leu	Arg	Val	Gln	Met	Ser	Pro	Ala	Ile	Met	Asn	Val	Ala	Val	Pro	Phe
		115					120					125			
Pro	Gln	His	Ser	Pro	Met	Leu	Gly	Gln	Arg	Pro	Leu	Leu	Gln	Met	Val
	130					135					140				
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<400> 6402

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Tyr	His	Ser	Leu	Ser	Met	Pro	Val	Tyr	His	Thr	Ala	Ala	Tyr	Glu	Phe
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Glu	Thr	Ala	Glu	Glu	Met	Glu	Ala	Ala	Phe	Cys	Gly	Gln	Lys	Ala	Gly
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His	Ala	Tyr	Ser	Arg	Ile	Thr	Asn	Pro	Thr	Val	Gln	Tyr	Phe	Glu	Gln
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Gly	Met	Ala	Ala	Ile	Ser	Asn	Ala	Leu	Ile	Thr	Leu	Ala	Ser	Ala	Gly
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Leu	Glu	Ser	Asn	Pro	Phe	Tyr	Glu	Leu	Ser	Thr	Arg	Gln	Phe	Gly	Ser
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Leu	Pro	Gly	Ala	Met	Leu	Thr	Phe	Asp	Leu	Pro	Ser	Arg	Glu	Ile	Cys
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<213> B.fragilis

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 Ala His Pro Leu Thr Arg Thr Ser Ile Leu Val Leu Tyr His Val Leu
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 Pro Pro Thr Ile Phe Ile Leu Ser Ile Leu Leu Asn Gln Ile Gly Ile
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 Arg Tyr Phe Asn His Val Met Ala His Thr Glu Tyr Val Pro Ile Val
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 Asn Thr Arg Gly Asp Val Ile Gly Lys Ser Leu Ala Val Glu Ala Ile
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 Asn Tyr Lys Asn Ala Tyr Ile Asn Pro Val Ile Arg Ile Ala Val Ser
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 Asp Lys Gly Lys Val Asp Ile Pro Met Glu Cys Tyr Leu Arg Tyr Gly
 260 265 270
 Glu Thr Leu Thr Ala Gly Ala Asn Arg Leu Leu Ser Asn Ala Phe Pro
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 Asp Asp Ser Ile Leu Cys Asp Pro Arg Phe Lys Gly Gly Lys Leu Trp

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Cys	Phe	Glu	Leu	Glu	Tyr	Glu	His	Leu	Lys	Gln	Val	Ile	Gly	Ile	Arg
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Val	Phe	Leu	Thr	Gly	Lys	Ala	Gly	Thr	Gly	Lys	Ser	Thr	Phe	Leu	Lys
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Lys	Leu	Pro	Phe	His	Pro	Leu	Leu	Pro	Asp	Asp	Pro	Asn	Leu	Ser	Leu
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Gln	Arg	Gly	Arg	Ile	His	Glu	Phe	Phe	Lys	Tyr	Thr	Lys	Pro	His	Arg
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Lys	Leu	Leu	Glu	Gln	Val	Glu	Leu	Val	Ile	Ile	Asp	Glu	Ile	Ser	Met
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Val	Arg	Ala	Asp	Met	Ile	Asp	Ala	Val	Asp	Arg	Ile	Leu	Arg	Val	Tyr
	130					135					140				
Ser	Arg	Asn	Leu	Arg	Asp	Pro	Phe	Gly	Gly	Lys	Gln	Val	Leu	Leu	Val
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Ile	Ile	Asn	Arg	Phe	Tyr	Pro	Thr	Pro	Tyr	Phe	Phe	Ser	Ala	Arg	Val
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 Gln Tyr Ala Ala Ala Ala Arg Ala Phe Asp Lys Gly Asp Phe Glu Thr
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 Cys Leu Glu Gln Phe Phe Leu Ala Ile His Ser Arg Tyr Asp Ile Glu
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 Lys Pro Ala Ala Arg Arg Leu Ile Arg Arg Lys Leu Gly Val Val Asn
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 Tyr Asn Arg Gly Lys Leu Arg Leu Gln Thr Glu Asn Ile Glu Gly Ala
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<400> 6406

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95

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<213> B.fragilis

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 Thr Met Leu Ala Tyr Val Arg Phe Asp Glu Ser Glu Val Pro Ser Tyr
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 Asp Tyr Pro Gly Glu Tyr Thr Tyr Lys Tyr Pro Lys Ala Gly Tyr Pro
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 Cys Lys Leu Ala Leu Arg Asp Glu Ser Pro Tyr Tyr Ile Asn Glu Asn
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1. **Introduction**
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<213> B.fragilis

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Cys	Arg	Glu	Asp	Lys	Ala	Leu	Pro	Glu	Glu	Ala	Glu	Cys	Ile	Asp	Arg
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Ile	Thr	Val	Lys	Asp	Gly	Thr	His	Ile	His	Leu	Ile	Arg	Thr	Asp	Glu
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Leu	Leu	Tyr	Ile	Gln	Ala	Cys	Gly	Asp	Tyr	Val	Thr	Leu	Val	Thr	Pro
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Ser	Gly	Gln	Tyr	Val	Lys	Glu	Gln	Thr	Met	Lys	Tyr	Phe	Asp	Ala	His
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 <213> B.fragilis

<400> 6411

Gln	Thr	Ala	Val	Lys	Ile	Tyr	His	His	Cys	Gly	Ile	Gln	Leu	Leu	Tyr
1				5					10					15	
Ile	Arg	Leu	Phe	Gln	Tyr	Ile	Cys	Ala	Pro	Leu	Lys	Lys	Arg	Arg	Met
		20						25					30		
Ile	Lys	Ala	Leu	Phe	Phe	Asp	Ile	Asp	Gly	Thr	Leu	Val	Ser	Phe	Asn
		35				40						45			
Thr	His	Glu	Ile	Pro	Ser	Ser	Thr	Leu	Ala	Ala	Ile	Ala	Glu	Ala	Lys
	50					55					60				
Ala	Lys	Gly	Ile	Lys	Ile	Phe	Ile	Ala	Thr	Gly	Arg	Pro	Lys	Ala	Ile
65				70					75						80
Ile	Asn	Asn	Leu	Thr	Ala	Leu	Gln	Glu	Arg	Glu	Leu	Ile	Asp	Gly	Tyr
			85					90						95	
Ile	Thr	Met	Asn	Gly	Gly	Tyr	Cys	Phe	Val	Gly	Asp	Glu	Val	Ile	Tyr
			100					105					110		
Lys	His	Ser	Ile	Pro	Val	Gln	Asp	Val	Lys	Ala	Leu	Ala	Ala	Leu	Ser
		115					120					125			
Asp	Glu	Arg	Asn	Phe	Pro	Cys	Ile	Phe	Val	Ala	Glu	His	Thr	Val	Ala
	130					135					140				
Val	Cys	Asn	Thr	Asn	Lys	Leu	Val	Asn	Glu	Ile	Phe	His	Asp	Phe	Leu
145					150				155						160
His	Val	Asp	Ile	Leu	Pro	Ile	Gln	Thr	Thr	Ala	Glu	Ala	Thr	Gln	Pro
			165					170						175	
Glu	Ile	Phe	Gln	Met	Thr	Pro	Phe	Ile	Thr	Thr	Glu	Glu	Glu	Lys	Thr
		180						185						190	
Val	Leu	Pro	Leu	Leu	Pro	Asn	Cys	Glu	Ser	Gly	Arg	Trp	Phe	Pro	Ala
		195					200					205			
Phe	Thr	Asp	Ile	Val	Ala	Lys	Gly	Ile	Arg	Lys	Gln	Lys	Gly	Ile	Asp
	210					215					220				
Glu	Ile	Ile	Arg	His	Phe	Gly	Ile	Gly	Gln	Glu	Glu	Thr	Met	Ala	Phe
225					230					235					240
Gly	Asp	Gly	Gly	Asn	Asp	Ile	Ser	Met	Leu	Arg	His	Ala	Ala	Ile	Gly
				245					250					255	
Val	Ala	Met	Gly	Asn	Ala	Asn	Asp	Asp	Val	Lys	Glu	Thr	Ala	Asp	Tyr
		260					265						270		
Ile	Thr	Thr	Ser	Val	Asp	Glu	Asp	Gly	Ile	Gln	Lys	Ala	Leu	Lys	His
		275					280					285			
Phe	Gly	Ile	Ile												
	290														

<210> 6412
 <211> 204
 <212> PRT
 <213> B.fragilis

<400> 6412

Lys Ala Lys Phe Ile Ile Tyr Lys Leu Tyr Thr Met Leu Pro Lys Lys
 1 5 10 15
 Lys Asn Leu Glu Glu Glu Arg Ala Lys His Thr Val Asp Ser Leu Tyr
 20 25 30
 Lys Asp Tyr Val Asp Asp Leu Phe Ser Tyr Ala Leu Gly Phe Gly Phe
 35 40 45
 Asp Lys Gln Thr Ala Met Asp Ala Ile His Asp Val Phe Cys Arg Val
 50 55 60
 Cys Ile Arg Glu Arg Glu Val Gln Glu Ile Gln Asn Pro Lys Phe Tyr
 65 70 75 80
 Leu Leu Arg Ala Leu Arg Asn Gln Leu Ile Asp Thr Tyr Lys Leu Lys
 85 90 95
 Arg Asn Tyr Ser Glu Val Leu Thr Gly Glu Ile Thr Asp Glu Leu Pro
 100 105 110
 Tyr Lys Ile Lys Ile Thr Val Glu Asp Glu Ile Ile Ala Ala Glu Glu
 115 120 125
 Gln Ala Glu Val Ser Gln Lys Val Asp Glu Ile Leu Ser Ile Leu Thr
 130 135 140
 Glu Arg Gln Arg Glu Ile Ile Tyr Leu Arg Tyr Met Gln Glu Cys Ser
 145 150 155 160
 Tyr Glu Glu Ile Ala Glu Ile Met Gln Ile Ser Val Pro Ala Cys Arg
 165 170 175
 Lys Leu Leu Tyr Arg Thr Leu Leu Lys Leu Lys His Asn Asn Thr Leu
 180 185 190
 Val Leu Phe Tyr Leu Leu Leu Ser Ile Asn Val Gly
 195 200

<210> 6413
 <211> 245
 <212> PRT
 <213> B.fragilis

<400> 6413
 Ser Val Lys Phe Gln Leu Leu Asn Thr Leu Phe Met Asp Thr Ala Leu
 1 5 10 15
 Tyr Leu Leu Pro Val Thr Leu Gly Asp Thr Pro Ile Glu Ser Val Leu
 20 25 30
 Pro Ser Tyr Asn Lys Glu Ile Ile Gln Gly Ile Lys His Phe Ile Val
 35 40 45
 Glu Asp Val Arg Ser Ala Arg Arg Phe Leu Lys Lys Val Asp Arg Glu
 50 55 60
 Ile Asp Ile Asp Ser Leu Thr Phe Tyr Pro Leu Asn Lys His Thr Ser
 65 70 75 80
 Pro Glu Asp Ile Ser Gly Tyr Leu Lys Pro Leu Ala Gly Gly Leu Ser
 85 90 95
 Met Gly Val Ile Ser Glu Ala Gly Cys Pro Ala Val Ala Asp Pro Gly
 100 105 110
 Ala Asp Val Val Ala Ile Ala Gln Arg Lys Asn Leu Lys Val Val Pro
 115 120 125
 Leu Val Gly Pro Ser Ser Ile Ile Leu Ser Val Met Gly Ser Gly Phe
 130 135 140
 Asn Gly Gln Ser Phe Ala Phe His Gly Tyr Leu Pro Ile Glu Pro Gly
 145 150 155 160
 Glu Arg Ala Lys Lys Ile Lys Ala Leu Glu Gln Arg Val Tyr Ala Glu
 165 170 175
 His Gln Thr Gln Leu Phe Ile Glu Thr Pro Tyr Arg Asn Asn Lys Met
 180 185 190
 Val Glu Asp Ile Leu His Asn Cys Arg Pro Gln Thr Arg Leu Cys Ile
 195 200 205

Ala Ala Asn Ile Thr Cys Glu Gly Glu Tyr Ile Arg Thr Lys Thr Ile
 210 215 220
 Lys Glu Trp Gln Gly Lys Val Pro Asp Leu Thr Lys Ile Pro Cys Ile
 225 230 235 240
 Phe Leu Leu Tyr Gln
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<210> 6414
 <211> 458
 <212> PRT
 <213> B.fragilis

<400> 6414

Asn Gly Cys Ser Val Pro Gly Leu Gly Ile Tyr His Ser Lys Phe Pro
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 Asp Ala Glu Arg Val Glu Ile Trp Gln Lys Gln Leu Thr Glu Glu Gly
 20 25 30
 Tyr Asp Ile Ile Leu Gly Val Arg Ser Ser Val Phe Leu Pro Phe Arg
 35 40 45
 Asn Leu Gly Leu Val Ile Val Asp Glu Glu His Glu Asn Thr Tyr Lys
 50 55 60
 Gln Gln Asp Pro Ala Pro Arg Tyr His Ala Arg Asn Ala Ala Ile Val
 65 70 75 80
 Leu Ala Ser Met Tyr Gly Ala Lys Thr Leu Leu Gly Thr Ala Thr Pro
 85 90 95
 Ser Val Glu Thr Trp Gln Asn Ala Thr Thr Gly Lys Phe Gly Trp Val
 100 105 110
 Glu Leu Lys Glu Arg Tyr Lys Glu Ile Gln Leu Pro Glu Ile Ile Pro
 115 120 125
 Val Asp Ile Lys Glu Leu His Arg Lys Lys Arg Met Thr Gly Gln Phe
 130 135 140
 Ser Pro Leu Leu Leu Gln Tyr Val Arg Glu Ala Leu Asp Asn Lys Gln
 145 150 155 160
 Gln Val Ile Leu Phe Gln Asn Arg Arg Gly Phe Ala Pro Met Ile Glu
 165 170 175
 Cys Arg Thr Cys Gly Trp Val Pro Lys Cys Lys Asn Cys Asp Val Ser
 180 185 190
 Leu Thr Tyr His Lys Gly Ile Asn Gln Leu Thr Cys His Tyr Cys Gly
 195 200 205
 Tyr Thr Tyr Gln Leu Pro Arg Ser Cys Pro Ala Cys Glu Gly Val Glu
 210 215 220
 Leu Met His Arg Gly Phe Gly Thr Glu Lys Ile Glu Asp Asp Val Lys
 225 230 235 240
 Leu Ile Phe Pro Glu Ala Ser Val Ala Arg Met Asp Leu Asp Thr Thr
 245 250 255
 Arg Thr Arg Ser Ala Tyr Glu Lys Ile Ile Ala Asp Phe Glu Gln Gly
 260 265 270
 Lys Thr Asp Ile Leu Ile Gly Thr Gln Met Val Ser Lys Gly Leu Asp
 275 280 285
 Phe Asp His Val Ser Val Val Gly Ile Leu Asn Ala Asp Thr Met Leu
 290 295 300
 Asn Tyr Pro Asp Phe Arg Ser Tyr Glu Arg Ala Phe Gln Leu Met Ala
 305 310 315 320
 Gln Val Ala Gly Arg Ala Gly Arg Lys Asn Lys Arg Gly Arg Val Val
 325 330 335
 Leu Gln Thr Lys Ser Ile Asp His Pro Ile Ile Arg Gln Val Met Thr
 340 345 350
 Asn Asp Tyr Glu Asp Met Val Ala Gly Gln Leu Ala Glu Arg Gln Met
 355 360 365

3049

Phe His Tyr Pro Pro Tyr Tyr Arg Met Val Tyr Val Tyr Leu Lys Asn
 370 375 380
 Arg Asn Glu Thr Leu Leu Asp Val Met Ala His Thr Met Ala Glu Lys
 385 390 395 400
 Leu Arg Ala Leu Phe Gly Asn Arg Ile Leu Gly Pro Asp Lys Pro Pro
 405 410 415
 Val Ala Arg Ile Gln Thr Leu Phe Ile Arg Lys Ile Val Val Lys Ile
 420 425 430
 Glu Gln Asn Ala Pro Met Ser Arg Ala Arg Glu Leu Val Phe Thr Thr
 435 440 445
 Gly Leu Glu Gly Ser Ala Arg Ser Val His
 450 455

<210> 6415
 <211> 510
 <212> PRT
 <213> B.fragilis

<400> 6415
 Ile Thr Asn Ser Ile Lys Thr Asn Ala Met Leu Arg Lys Ile Arg Leu
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 Thr Cys Gly Ile Ile Cys Leu Thr Leu Ile Thr Leu Leu Phe Leu Asp
 20 25 30
 Phe Thr Gly Thr Leu His Gly Trp Phe Gly Trp Leu Ala Lys Ile Gln
 35 40 45
 Phe Leu Pro Ala Val Leu Ala Leu Asn Val Gly Val Val Val Leu Leu
 50 55 60
 Ile Ile Leu Thr Gly Val Phe Gly Arg Ile Tyr Cys Ser Val Ile Cys
 65 70 75 80
 Pro Leu Gly Val Phe Gln Asp Val Ala Ala Trp Ile Gly Lys Lys Arg
 85 90 95
 Lys Lys Leu Pro Tyr Ser Tyr Ser Pro Ala Leu Ser Leu Leu Arg Tyr
 100 105 110
 Gly Ala Leu Ala Ile Phe Ile Ile Thr Leu Val Ala Gly Val Ser Phe
 115 120 125
 Ile Ala Thr Leu Phe Ala Pro Tyr Ser Ala Tyr Gly Arg Ile Ala Asn
 130 135 140
 Asn Leu Phe Gln Pro Ile Trp Leu Trp Gly Asn Asn Leu Phe Ala His
 145 150 155 160
 Leu Ala Glu Arg Ala Gly Asn Tyr Ala Phe Tyr Glu Val Asp Ile Trp
 165 170 175
 Ile Lys Ser Leu Pro Thr Phe Ile Val Ala Ala Ala Thr Phe Val Ile
 180 185 190
 Leu Ile Leu Leu Ala Trp Arg Asn Gly Arg Thr Tyr Cys Asn Thr Ile
 195 200 205
 Cys Pro Val Gly Thr Val Leu Gly Phe Leu Ser Arg Tyr Ser Leu Phe
 210 215 220
 Arg Ile Thr Ile Asp Thr Glu Lys Cys Asn Lys Cys Gly Leu Cys Ala
 225 230 235 240
 Arg His Cys Lys Ala Ala Cys Ile Asn Ala Lys Glu His Thr Ile Asp
 245 250 255
 Tyr Ser Arg Cys Val Val Cys Met Asp Cys Leu Gly Lys Cys Lys Gln
 260 265 270
 Lys Ala Leu Ser Tyr Gln Leu Arg Thr Thr Lys Ala Arg Pro Ala Lys
 275 280 285
 Ala Glu Glu Asn Ala Leu Ala Ala Ser Ser Lys Glu Val Asn Glu Ala
 290 295 300
 Arg Arg Asn Phe Leu Thr Val Thr Ala Met Ala Ala Thr Ala Ser Ala
 305 310 315 320

Leu Lys Ala Gln Glu Lys Lys Val Asp Gly Gly Leu Ala Ala Ile Glu
 325 330 335
 Asp Lys Lys Ile Pro Asn Arg Gln Thr Pro Ile Thr Pro Pro Gly Ser
 340 345 350
 Leu Ser Ala Arg Asn Met Ala Ala His Cys Thr Ala Cys Gln Leu Cys
 355 360 365
 Val Ser Ala Cys Ser Asn Gln Val Leu Arg Pro Ser Thr Asn Leu Met
 370 375 380
 Asn Leu Met Gln Pro Glu Ile Ser Tyr Glu Arg Gly Tyr Cys Arg Pro
 385 390 395 400
 Glu Cys Asn Asp Cys Ser Gln Val Cys Pro Thr Gly Ala Ile His Pro
 405 410 415
 Ile Thr Ala Ala Asp Lys Ser Ser Thr Gln Ile Gly His Ala Val Trp
 420 425 430
 Ile Lys Ala Asn Cys Val Ser Leu Thr Asp Gly Val Lys Cys Asp Asn
 435 440 445
 Cys Ala Arg His Cys Pro Thr Gly Ala Ile Gln Met Ile Val Ala Glu
 450 455 460
 Pro Glu Lys Glu Ala Ser Pro Gln Ile Pro Ala Ile Asn Thr Glu Arg
 465 470 475 480
 Cys Ile Gly Cys Gly Ala Cys Glu Asn Leu Cys Pro Ala Arg Pro Phe
 485 490 495
 Ser Ala Ile Tyr Val Glu Gly His Glu Arg His Arg Ile Ile
 500 505 510

<210> 6416

<211> 265

<212> PRT

<213> B.fragilis

<400> 6416

Lys Ser Val Pro Gly Ile Phe Thr Ser Asn Ile Val Ala Val Met Lys
 1 5 10 15
 Val Leu Ile Val Glu Asp Glu Thr Ala Ala Tyr Glu Asn Leu Thr Asp
 20 25 30
 Ile Leu Thr Glu Ile Thr Pro Asp Ile Arg Ile Met Ala Asn Thr Glu
 35 40 45
 Ser Val Thr Gln Thr Val Gly Trp Leu Gln Ser Asn Pro Ala Pro Asp
 50 55 60
 Leu Ile Phe Met Asp Ile His Leu Ser Asp Gly Ser Ala Phe Ala Ile
 65 70 75 80
 Phe Asp Arg Ile Glu Leu Glu Thr Pro Ile Ile Phe Thr Thr Ala Tyr
 85 90 95
 Asp Arg Tyr Ala Ile Glu Ala Phe Lys Val Asn Ser Ile Asp Tyr Leu
 100 105 110
 Leu Lys Pro Val Lys Val Glu Asp Val Glu His Ala Leu Glu Lys Tyr
 115 120 125
 Ser Lys Leu Thr Arg Gln Asp Leu Leu Gln Tyr Leu Ser Gln Leu Thr
 130 135 140
 Leu Leu Lys Pro Ala Pro Arg Tyr Lys Asp Lys Leu Leu Ile Ala His
 145 150 155 160
 Lys Asp Lys Leu Leu Pro Val Asn Ile Lys Asn Ile Ser Tyr Phe Tyr
 165 170 175
 Ala Thr Gly Lys Asn Thr Tyr Val Cys Leu Lys Asp Gly Asn Arg Tyr
 180 185 190
 Pro Tyr Ser Lys Thr Leu Glu Gln Ile Ala Ser Ser Leu Asn Pro Glu
 195 200 205
 Asp Phe Ile Arg Ala Asn Lys Gln Phe Ile Val Ala Arg Asp Ser Val
 210 215 220

Thr Asp Ile Thr Ile Trp Phe Asp Ser Arg Leu Leu Ile Thr Leu Asp
 225 230 235 240
 Thr Glu Val Pro Glu Arg Ile Tyr Val Ser Lys Asn Lys Ala Ser Glu
 245 250 255
 Phe Lys Thr Trp Leu Val Asn Asp Lys
 260 265

<210> 6417
 <211> 280
 <212> PRT
 <213> B.fragilis

<400> 6417
 Ile Thr Met Phe Tyr Asp Tyr Leu Cys Lys Gly Lys Ser Leu Tyr Leu
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 Ser Thr Gln Cys Leu Leu Ile Thr Ile Ser Phe Pro Asp Met Asp Ile
 20 25 30
 Val Asp Lys Leu Asn Lys Glu Phe Leu Thr Gln Pro Phe Cys Lys Asn
 35 40 45
 Glu Gln Leu Pro Glu Glu Leu Asn Glu Tyr Lys Arg Ile Ala Tyr Asn
 50 55 60
 Tyr Ala Arg Ile Glu Asn Ser Ile Ala Val Leu Ser Asp Met His Thr
 65 70 75 80
 Asn Ile Ser Tyr Ile Tyr Tyr Gly Gly Thr Ala Glu Thr Leu Gly Ile
 85 90 95
 Ala Arg Lys Gly Asp Asn Gln Asn Leu Glu Ser Ile Trp Glu Lys Glu
 100 105 110
 Val Phe Lys Tyr Ile His Pro Asp Asp Leu Ala Glu Lys Tyr Val Gln
 115 120 125
 Glu Leu Arg Phe Tyr His Phe Leu Lys Gln Ile Pro His Lys Lys Arg
 130 135 140
 Ala Asp Tyr Phe Leu Met Ser Lys Leu Arg Met Arg Asp Pro Ser Gly
 145 150 155 160
 Lys Tyr Ile Pro Ile Leu His Arg Met Phe Tyr Val Ala Thr His Ser
 165 170 175
 Asn Asp Ser Met Trp Leu Ala Leu Cys Leu Tyr Asn Leu Ser Val Asp
 180 185 190
 Pro Thr Met Ser Cys Arg Val Ile Asn Ser Thr Asn Gly Gln Val Ile
 195 200 205
 Glu Leu Glu Lys Gln Asp Cys Ser Lys Leu Leu Ser Asp Arg Glu Lys
 210 215 220
 Thr Ile Leu Gln Leu Ile Asp Met Gly Lys Thr Ser His Glu Ile Ala
 225 230 235 240
 Arg Glu Leu Phe Ile Ser Lys Asn Thr Val Ser Arg His Arg Gln Asn
 245 250 255
 Ile Leu Glu Lys Leu Gln Val Lys Asn Ser Ile Glu Ala Cys Arg Ile
 260 265 270
 Ala Lys Glu Leu Lys Leu Leu Phe
 275 280

<210> 6418
 <211> 195
 <212> PRT
 <213> B.fragilis

<400> 6418
 Thr Gln Val Thr Pro Cys Arg Arg Leu His Val Trp Glu Glu Leu Ile
 1 5 10 15
 Leu Thr Phe Asn Tyr Tyr Ile Ile Ile Met Glu Thr Thr Ser Ile Lys

Variable	Unit	Mean	SD	Min	Max	Skewness	Kurtosis	Normality
Age	Years	35.2	12.5	18	65	-0.1	3.2	0.95
Gender	Male/Female	1.2	1.1	0	2	0.5	1.8	0.88
Education	Years	12.8	2.1	8	16	-0.2	2.5	0.92
Income	\$/month	1500	500	500	3000	0.3	2.1	0.90
Health	Good/Bad	1.5	1.0	0	2	0.2	1.5	0.91
Marital	Married/Single	1.3	1.2	0	2	0.4	1.9	0.89
Occupation	Various	1.8	1.5	0	3	0.1	2.0	0.93
Religion	Various	1.4	1.1	0	3	0.2	1.7	0.90
Smoking	Yes/No	0.8	0.8	0	1	0.1	1.2	0.94
Drinking	Yes/No	0.5	0.5	0	1	0.0	1.0	0.96
Exercise	Yes/No	0.7	0.7	0	1	0.1	1.1	0.93
Stress	High/Low	1.1	1.0	0	2	0.3	1.6	0.87
Sleep	Hours	7.5	1.5	5	10	-0.1	2.3	0.91
Appetite	Good/Bad	1.4	1.1	0	2	0.2	1.5	0.90
Mood	Happy/Sad	1.2	1.0	0	2	0.1	1.4	0.92
Energy	High/Low	1.3	1.1	0	2	0.2	1.6	0.89
Concentration	Good/Bad	1.4	1.0	0	2	0.1	1.5	0.91
Memory	Good/Bad	1.3	1.1	0	2	0.2	1.6	0.88
Emotion	Stable/Unstable	1.2	1.0	0	2	0.1	1.4	0.90
Personality	Various	1.5	1.2	0	3	0.2	1.7	0.89
Values	Various	1.4	1.1	0	3	0.1	1.6	0.91
Beliefs	Various	1.3	1.0	0	3	0.2	1.5	0.88
Attitudes	Various	1.4	1.1	0	3	0.1	1.6	0.90
Interests	Various	1.5	1.2	0	3	0.2	1.7	0.89
Hobbies	Various	1.4	1.1	0	3	0.1	1.6	0.91
Skills	Various	1.3	1.0	0	3	0.2	1.5	0.88
Abilities	Various	1.4	1.1	0	3	0.1	1.6	0.90
Temperament	Various	1.5	1.2	0	3	0.2	1.7	0.89
Character	Various	1.4	1.1	0	3	0.1	1.6	0.91
Qualities	Various	1.3	1.0	0	3	0.2	1.5	0.88
Attributes	Various	1.4	1.1	0	3	0.1	1.6	0.90
Features	Various	1.5	1.2	0	3	0.2	1.7	0.89
Properties	Various	1.4	1.1	0	3	0.1	1.6	0.91
Characteristics	Various	1.3	1.0	0	3	0.2	1.5	0.88
Qualities	Various	1.4	1.1	0	3	0.1	1.6	0.90
Attributes	Various	1.5	1.2	0	3	0.2	1.7	0.89
Features	Various	1.4	1.1	0	3	0.1	1.6	0.91
Properties	Various	1.3	1.0	0	3	0.2	1.5	0.88
Characteristics	Various	1.4	1.1	0	3	0.1	1.6	0.90
Qualities	Various	1.5	1.2	0	3	0.2	1.7	0.89
Attributes	Various	1.4	1.1	0	3	0.1	1.6	0.91
Features	Various	1.3	1.0	0	3	0.2	1.5	0.88
Properties	Various	1.4	1.1	0	3	0.1	1.6	0.90
Characteristics	Various	1.5	1.2	0	3	0.2	1.7	0.89
Qualities	Various	1.4	1.1	0	3	0.1	1.6	0.91
Attributes	Various	1.3	1.0	0	3	0.2	1.5	0.88
Features	Various	1.4	1.1	0	3	0.1	1.6	0.90
Properties	Various	1.5	1.2	0	3	0.2	1.7	0.89
Characteristics	Various	1.4	1.1	0	3			

<400> 6419

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<210> 6420
<211> 212
<212> PRT
<213> B.fragilis
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<400> 6420

Thr 1	Ser	Asn	Thr	Met 5	Lys	Lys	Val	Val	Ile 10	Phe	Ala	Arg	Val	Ser 15	Ser
Thr	Asn	Gly	Thr	Gln	Asp	Tyr	Glu	Arg	Gln	Ile	Asn	Asp	Leu	Gln	Thr
			20					25					30		
Leu	Ala	Ser	Ala	Asn	Asn	Trp	Thr	Val	Glu	Ala	Val	Phe	Ala	Glu	Lys
		35					40					45			
Val	Ser	Gly	Ala	Lys	Lys	Asn	Thr	Glu	Arg	Ile	Glu	Leu	Met	Asn	Met
	50					55					60				
Ile	Asn	Tyr	Ile	Asn	Ser	His	Asn	Ile	His	Lys	Val	Leu	Val	Thr	Glu
65					70					75					80

Leu Ser Arg Leu Gly Arg Asp Thr Leu Gln Val Leu Gln Ala Ile Glu
 85 90 95
 Ile Leu Asn Gln Asn Lys Val Ser Val Phe Ile Gln Asn Tyr Asn Ile
 100 105 110
 Glu Thr Leu Thr Pro Glu Gly Glu Ile Asn Pro Met Ser Gln Phe Leu
 115 120 125
 Ile Thr Ile Leu Ala Glu Val Ala Arg Met Glu Arg Lys Thr Ile Arg
 130 135 140
 Glu Arg Val Ala Ser Gly Tyr Gln Asn Phe Arg Ser Asn Gly Gly Lys
 145 150 155 160
 Val Gly Arg Lys Val Gly Tyr Thr Lys Ser Asp Glu Val Met Arg Glu
 165 170 175
 Glu Tyr Ala Glu Glu Leu Arg Leu Leu Lys Arg Gly Tyr Ser Leu Arg
 180 185 190
 Asn Thr Ser Lys Leu Thr Gly Thr Ser Ile Asn Thr Leu Arg Lys Leu
 195 200 205
 Thr Gln Leu Thr
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<210> 6421

<211> 447

<212> PRT

<213> B.fragilis

<400> 6421

Phe Thr Gly Thr Thr His Arg Arg Ile Leu Phe Tyr Phe Asn Asn Tyr
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 Phe Ser Tyr Glu Gln Ser Leu Asn Thr Gly Asn Gly Arg Phe Ile Arg
 20 25 30
 Ser Gln Tyr Pro Val Ser Glu Gln Cys Ala Gln Phe Leu Gly His Gly
 35 40 45
 Val Cys His His Ile Lys Gln Arg Leu Val Pro Val Phe Gln Ile Asp
 50 55 60
 Ile His His Pro Val Ile Arg Arg Ile Met Lys His Leu Pro Leu Ser
 65 70 75 80
 Gln Leu Ser Arg His His Ile Phe Ile Ile Val Arg His His Leu Thr
 85 90 95
 Asp Asp Gly Met Val Tyr Thr Phe Gly Leu Gln His Tyr Pro Ala Pro
 100 105 110
 Phe Ile Phe Ser Ser Gly Thr Ser Gly Asn Leu Arg His Gln Leu Glu
 115 120 125
 Gly Thr Phe Val Arg Thr Glu Ile Gly Ile Ile Gln His Arg Val Arg
 130 135 140
 Ile Glu Tyr Pro His His Ala Asp Val Val Lys Val Glu Ser Phe Gly
 145 150 155 160
 Tyr His Leu Gly Thr Asp Gln Tyr Ile Gly Leu Ser Leu Phe Lys Val
 165 170 175
 Cys Asn Asn Phe Phe Val Cys Arg Pro Arg Thr Cys Ser Ile Glu Ile
 180 185 190
 His Thr Cys Tyr Gly Ser Phe Arg Lys Asn Gln Leu His Ile Ile Phe
 195 200 205
 Tyr Leu Phe Arg Thr Lys Ser Ser Val His Gln Leu Asp Pro Phe Ala
 210 215 220
 Ser Arg Thr Arg Thr Gly Gln Leu Val Ser Ile Pro Ala Ile Val Ala
 225 230 235 240
 Ser Gln Leu Ile Asp Thr Phe Met Ile Gly Gln Ala Asp Ile Thr Val
 245 250 255
 Leu Ala Leu Trp His Pro Ser Ala Arg Ala Ala Leu Tyr His Arg Ser
 260 265 270

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Lys Ser Pro Ala Ile Leu Lys Gln Asn His Leu Leu Phe Ile Ile Glu
 275 280 285
 Cys Leu Ala Asp Ile Leu Gln Gln Gln Arg Arg Glu Leu Pro Arg His
 290 295 300
 Pro Leu Leu Ala Val Gln Leu Leu Tyr Ile Tyr Arg Asn Asn Leu Arg
 305 310 315 320
 Gln Leu Asn Phe Leu Ile Ala Phe Phe Gln Phe His Pro Pro Glu Phe
 325 330 335
 Ala Gly Ser Gly Ile Leu Pro Ser Leu His Arg Arg Ser Gly Ser Thr
 340 345 350
 Gln Gln Arg Leu Cys Pro Ile His Arg Ser Gln His Asp Gly Ser Ile
 355 360 365
 Pro Gly Met Ile Ala Arg Cys Gly Ile Leu Leu Leu Ile Arg Ile Phe
 370 375 380
 Val Phe Leu Val His Asn Asp Gln Ser Glu Ile Pro Lys Arg Glu Glu
 385 390 395 400
 His Arg Arg Ala Tyr Pro Gln Asn Asp Val Val Thr Leu Leu Arg Gln
 405 410 415
 Leu Leu Leu Pro Asp Leu Tyr Ser Leu Gly Val Gly Glu Leu Gly Val
 420 425 430
 Ile Asp Ser Gln Pro Gly Asn Arg Thr Pro Val Ser Ala Val Arg
 435 440 445

<210> 6422
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 6422
 Leu Lys Thr Thr Thr Gly Arg Val Asn Gln Tyr Thr Ile Phe Pro Thr
 1 5 10 15
 Met Arg Glu Leu Asn Val Gly Gly Phe Ala Ala Cys Leu Ser Val Tyr
 20 25 30
 Pro Glu Lys Ala Arg His Lys Lys Asn Lys Phe Lys Thr Ala Cys Asn
 35 40 45
 Gln Ile Arg Ser Ala Met Asn Arg Thr Glu Thr Tyr Asn Ser Thr Thr
 50 55 60
 Gln
 65

<210> 6423
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 6423
 Lys Ile Ser Thr Thr Lys Ser Pro Cys Ser Ile Asn Thr Asp Thr Leu
 1 5 10 15
 Ile Leu Lys Val Arg Lys Ser Ile Leu Ile Cys Leu Asp Gln Asp Ile
 20 25 30
 Glu Lys Ala Gln Arg Thr Val Asp Glu Lys Gln Ala Ala Val Asp Gly
 35 40 45
 Leu Asn Ala Thr Leu Lys Lys Leu Leu Asp Ala Tyr Ala Ala Glu
 50 55 60

<210> 6424
 <211> 419
 <212> PRT
 <213> B.fragilis

<400> 6424

Pro Asn Arg Ala Ile Gly Ile Ile Thr Asn Met Asn Lys Leu Leu Met
 1 5 10 15
 Pro Phe Met Thr Leu Val Cys Leu Leu Phe Thr Ala Cys Asn Lys Asp
 20 25 30
 Asp Ile Leu Pro Gly Gly Pro Met Leu Trp Thr Tyr Glu Ile Leu Thr
 35 40 45
 Pro Glu Ser Val Glu Tyr Glu Gly Gly Thr Val Gly Trp Ile Pro Lys
 50 55 60
 Glu Cys Phe Lys Ala Asn Gly Asn Glu Gly Tyr Ile Val Met Thr Cys
 65 70 75 80
 Lys Asn Phe Asp Met Leu Asn Pro Ile Ser Gly Gly Ser Tyr Thr Tyr
 85 90 95
 Asp Cys Gly Trp Ala Thr Leu Lys Val Glu Ala Asn Gln Leu Lys Ile
 100 105 110
 His Phe Pro Arg Gln Val Ser Glu Ala Pro Asp Ala Tyr Glu Glu Ile
 115 120 125
 Thr Ile Ser Thr Asn Asp Gly Lys Arg Thr Ala Ser Thr Ile Ile Cys
 130 135 140
 Leu Ser Arg Thr Phe Lys Asp Glu Gly Gln Pro Asp Pro Glu Pro Lys
 145 150 155 160
 Pro Leu Pro Glu Glu Ala Lys Phe Lys Met Lys Lys Ala Tyr Phe Thr
 165 170 175
 Pro Phe Met His Leu Asp Thr Gln Phe Pro Ala Pro Leu Asp Leu Val
 180 185 190
 Thr Phe Arg Ile Thr Asp Ile Asn Asp Asn Tyr Thr Pro Leu Gly Phe
 195 200 205
 Pro Glu Phe Thr Gln Tyr Tyr Asp Ser Ile Val Trp Ser Ala Glu Gly
 210 215 220
 Phe Pro His Thr Phe Arg Val Tyr Glu Ser Asn Thr Thr Glu Gly Gly
 225 230 235 240
 Met Glu Thr His Leu Ala Thr Glu Trp Ser Ser His Phe Phe Lys Ser
 245 250 255
 Gly Thr Ile Lys Asn Tyr Leu Lys Gly Tyr Arg Lys Gly Lys Val Glu
 260 265 270
 Tyr Glu Thr Ser Leu Ala Val Arg Leu Tyr Glu Arg Asp Phe Leu Gly
 275 280 285
 Ile Glu Trp Gly Thr Ile Val Leu Gln Ser Pro Gln Asn Leu Thr Thr
 290 295 300
 Tyr Cys Leu Leu Asp Thr Asp Tyr Glu Tyr Gln Val Tyr Asp Ile Val
 305 310 315 320
 Ala Lys Asp Tyr Asn Pro Phe Ser Lys Ile Ile Pro Val Asn His Lys
 325 330 335
 Gln Leu Ser Asp Ser Asp Phe Pro Ala Ala Ala Gln Lys Ala Ile Lys
 340 345 350
 Thr Leu Met Glu Asn Asn Ile Gly Glu Gly Gln Asn Ala Gly Gly Lys
 355 360 365
 Glu Asn Leu Phe Lys Cys Leu Pro Glu Glu Gly Val Lys Ala Glu Leu
 370 375 380
 Tyr Trp Glu Asn Lys Thr Thr Arg Ile Leu Met Leu His Gln Leu Ser
 385 390 395 400
 Thr Asp Pro Asp Asp Leu Thr Gln Glu Lys Tyr Tyr Leu His Val Glu
 405 410 415
 Pro Lys Gln

<210> 6425

<211> 431

[illegible]

<400> 6425

Tyr 1	Asp	Met	Ala	Lys 5	Ile	Gln	Ile	Lys	Ser 10	Glu	Lys	Leu	Thr 15	Pro	Phe
Gly	Gly	Ile	Phe 20	Ser	Ile	Met	Glu	Lys 25	Phe	Asp	Ser	Met 30	Leu	Ser	Pro
Val	Ile	Asp 35	Ser	Thr	Leu	Gly	Gln 40	Arg	Cys	Ser	Ser 45	Ile	Phe	Gly	Tyr
Gln	Phe 50	Ser	Glu	Ile	Val	Arg 55	Ser	Leu	Met	Ser	Val 60	Tyr	Phe	Cys	Gly
Gly 65	Ser	Cys	Val	Glu 70	Asp	Val	Thr	Ser	Gln	Leu 75	Met	Arg	His	Leu	Ser 80
Tyr	His	Pro	Thr	Leu 85	Arg	Thr	Cys	Ser	Ser 90	Asp	Thr	Ile	Leu	Arg 95	Ala
Ile	Lys	Glu	Leu 100	Thr	Gln	Glu	Asn 105	Ile	Ser	Tyr	Thr	Ser 110	Asp	Gln	Gly
Lys	Thr	Tyr 115	Asp	Phe	Asn	Thr	Ala 120	Asp	Lys	Leu	Asn 125	Thr	Leu	Leu	Ile
Asn	Ala 130	Leu	Val	Ser	Thr	Gly 135	Glu	Leu	Lys	Glu	Ile 140	Glu	Glu	Tyr	Asp
Val 145	Asp	Phe	Asp	His 150	Gln	Phe	Leu	Glu	Thr	Glu 155	Lys	Tyr	Asp	Ala	Lys 160
Pro	Thr	Tyr	Lys	Lys 165	Phe	Leu	Gly	Tyr	Arg 170	Pro	Gly	Val	Tyr	Val 175	Ile
Gly	Asp	Lys	Ile 180	Val	Tyr	Ile	Glu	Asn 185	Ser	Asp	Gly	Asn 190	Thr	Asn	Val
Arg	Phe 195	His	Gln	Ala	Asp	Thr	His 200	Lys	Arg	Phe	Phe 205	Ala	Leu	Leu	Glu
Ser	Gln 210	Asn	Ile	Arg	Val	Asn 215	Arg	Phe	Arg	Ala	Asp 220	Cys	Gly	Ser	Cys
Ser 225	Lys	Glu	Ile	Val 230	Ser	Glu	Ile	Glu	Lys	His 235	Cys	Lys	His	Phe	Tyr 240
Ile	Arg	Ala	Asn 245	Arg	Cys	Ser	Ser	Leu	Tyr 250	Asn	Asp	Ile	Phe	Ala 255	Leu
Arg	Gly	Trp	Lys 260	Thr	Glu	Glu	Ile	Asn 265	Gly	Ile	Gln	Phe 270	Glu	Leu	Asn
Ser	Ile 275	Leu	Val	Glu	Lys	Trp	Glu 280	Gly	Lys	Cys	Tyr	Arg 285	Leu	Val	Ile
Gln	Arg 290	Gln	Arg	Arg	Asn	Ser 295	Gly	Asp	Leu	Asp	Leu 300	Trp	Glu	Gly	Glu
Tyr 305	Thr	Tyr	Arg	Cys 310	Ile	Leu	Thr	Asn	Asp	Tyr 315	Lys	Ser	Ser	Thr	Arg 320
Asp	Ile	Val	Glu 325	Phe	Tyr	Asn	Leu	Arg	Gly 330	Gly	Lys	Glu	Arg	Ile 335	Phe
Asp	Asp	Met	Asn 340	Asn	Gly	Phe	Gly	Trp 345	Ser	Arg	Leu	Pro 350	Lys	Ser	Phe
Met	Ala 355	Glu	Asn	Thr	Val	Phe	Leu 360	Leu	Leu	Thr	Ala 365	Leu	Ile	His	Asn
Phe	Tyr 370	Lys	Thr	Ile	Met	Ser 375	Arg	Leu	Asp	Thr	Lys 380	Ala	Phe	Gly	Leu
Lys 385	Lys	Thr	Ser	Arg 390	Ile	Lys	Ala	Phe	Val	Phe 395	Arg	Phe	Ile	Ser	Val 400
Pro	Ala	Lys	Trp 405	Ile	Met	Thr	Ala	Arg	Gln 410	Tyr	Val	Leu	Asn	Ile 415	Tyr
Thr	Glu	Asn	Arg 420	Ala	Tyr	Ala	Lys	Pro 425	Phe	Lys	Thr	Glu 430	Phe	Gly	

<210> 6426
 <211> 165
 <212> PRT
 <213> B.fragilis

<400> 6426

Leu Asn Ser Tyr Lys Met Lys Lys Asn Val Phe Ile Leu Phe Val Val
 1 5 10 15
 Leu Leu Thr Thr Ser Val Phe Met Ser Cys Ser Ser Asp Asp Asn
 20 25 30
 Asp Asn Gly Lys Val Glu Asn Thr Ile Ile Ile Asn Gly Lys Glu Tyr
 35 40 45
 Leu Asn Asp Glu Ser Ala Ser Val Ser Tyr Asn Ser Tyr Ser Gln Ser
 50 55 60
 Ile Ser Phe Glu Ala Gly Phe Ser Asn Pro Glu Ser Leu Met Asp Ile
 65 70 75 80
 Ser Tyr Phe Thr Ile Ala Ser Asn Asp Ala Ala Ser Val Asp Lys Leu
 85 90 95
 Thr Asn Gly Met Glu Leu Asn Ala Lys Val Lys Glu Phe Val Lys Asn
 100 105 110
 Thr Asp Leu Gly Ser Ser Tyr Thr Tyr Thr Thr Val Gly Gly Lys Val
 115 120 125
 Val Val Asp Asn Val Thr Ser Glu Ser Ile Thr Leu Arg Tyr Asp Asp
 130 135 140
 Phe Lys Phe Thr Lys Asn Gly Gly Glu Tyr Thr Ile Lys Gly Arg Val
 145 150 155 160
 Leu Tyr His Lys Asn
 165

<210> 6427
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 6427

Pro Thr Asp Tyr Gln Thr Ile Tyr Ile Phe His Phe Cys His Phe Thr
 1 5 10 15
 Pro Leu Phe Cys Tyr Leu Val His Phe Glu Phe Ser Phe Ser Phe Ala
 20 25 30
 Pro Leu Gln Tyr Arg Lys Thr Lys Glu Asn Gln Leu Phe Ser Val Ile
 35 40 45
 Thr Arg Leu Trp Tyr Leu Asn Arg Asp Lys Thr Ser Ser Val Trp Gln
 50 55 60
 Arg
 65

<210> 6428
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 6428

Lys Lys Cys Tyr Val Ser Lys Ser Met Phe Ser Leu Ala Asp Asp Gly
 1 5 10 15
 Leu Ala Ser Ile Leu Cys Asn Thr Ser Ile Tyr Ser Tyr Phe Val Gly
 20 25 30
 Asn Pro Lys Gln Thr Ile Glu Gly Cys Lys Trp Arg Phe Ala Lys Arg
 35 40 45
 Asn Ser Ser Lys Arg Glu Ser Leu Phe Ile Ile Arg Tyr Lys Lys Glu

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<210> 6429
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 6429

Ser Leu Leu Tyr Pro Ser Ile Phe Leu Pro Ile Phe Leu Glu Tyr Ser
 1 5 10 15
 Asp Phe Gly Cys Asp Phe Gly Tyr Ser Thr Tyr Asn Ser Gly Trp Ser
 20 25 30
 Cys Phe Val Ile Ser Lys Tyr Gly Lys Gln Tyr Ile Ala Glu Lys Asp
 35 40 45
 Lys Cys Met Asn Gly Pro Phe Asn Leu Phe Lys Val Leu Glu Leu Pro
 50 55 60
 Gln His
 65

<210> 6430
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 6430

Phe Ile Ser Tyr Ser Glu Phe Ile Met Val Asn Glu Leu Asn Lys Glu
 1 5 10 15
 Met Asp Val Asp Lys Tyr Lys Ile Arg Ser Trp Ser Lys Asp Asp Phe
 20 25 30
 Ser Thr Leu Ala Lys Tyr Leu Asn Asn Lys Lys Ile Trp Asp Asn Cys
 35 40 45
 Arg Asp Ser Leu Pro Tyr Pro Tyr Ser Glu Asn Asp Ala Gln Gln Phe
 50 55 60
 Ile Leu Ser Val Ser Ser Gln Asn Glu Gln Asn Asn Tyr Cys Ile Glu
 65 70 75 80
 Val Asn Gln Glu Ala Ala Gly Asn Ile Ser Phe Ala Arg Gly Ile Asp
 85 90 95
 Val Glu Arg Tyr Asn Ala Glu Leu Gly Tyr Trp Leu Ala Glu Pro Tyr
 100 105 110
 Trp Gly Lys Gly Ile Met Thr Gln Met Leu Ala Leu Ala Ile Ser Ser
 115 120 125
 Tyr Phe His His Thr Asp Val Met Arg Ile Cys Ala Asn Val Tyr Ala
 130 135 140
 Gly Asn Ile Ala Ser Met Arg Val Leu Glu Lys Ile Gly Phe Arg Lys
 145 150 155 160
 Cys Gly Ile His Arg Asn Ala Cys Phe Lys Asn Gly Val Phe Thr Asp
 165 170 175
 Cys His Tyr Phe Glu Leu Leu Lys Glu Glu Phe Arg Asn Leu Val Lys
 180 185 190

<210> 6431
 <211> 235
 <212> PRT
 <213> B.fragilis

<400> 6431

Leu Leu Ala Tyr Asn Thr Leu Leu Leu Lys Trp Phe Tyr Ile Ser Leu
 1 5 10 15
 Cys Val Glu Arg Asp Ile Phe Gln Phe Ile Met Asn Gly Phe Phe Leu

[illegible]

<400> 6432

<210> 6433

<400> 6433

Tyr	Tyr	Leu	Tyr	Ser	Leu	Ile	Thr	His	Ser	Thr	Ala	Ile	Glu	Gly	Ser
1				5					10					15	
Thr	Leu	Thr	Glu	Leu	Asp	Thr	Gln	Leu	Leu	Phe	Asp	Glu	Gly	Val	Thr
			20					25					30		
Ala	Lys	Gly	Lys	Pro	Leu	Val	His	His	Leu	Met	Asn	Glu	Asp	Leu	Lys
		35					40					45			
Gln	Ala	Tyr	Glu	Leu	Ala	Lys	Thr	Glu	Ser	Ser	Ser	Leu	Val	Gln	Ile
	50					55					60				

Thr	Pro	Ala	Leu	Leu	Gln	Arg	Leu	Asn	Ala	Thr	Leu	Met	Arg	Thr	Thr
65					70					75					80
Ser	Ser	Val	His	Ser	Val	Met	Gly	Gly	Ser	Phe	Asp	Ser	Ser	Lys	Gly
				85					90					95	
Asp	Phe	Arg	Leu	Cys	Gly	Val	Thr	Ala	Gly	Val	Gly	Gly	His	Ser	Tyr
			100					105					110		
Met	Asn	Tyr	Leu	Lys	Val	Pro	Ala	Lys	Val	Asp	Glu	Leu	Cys	Ala	Ile
		115					120					125			
Leu	Gln	Val	Lys	Gln	Lys	Thr	Val	Gly	Thr	Leu	Arg	Glu	Gln	Tyr	Glu
	130					135					140				
Leu	Ser	Phe	Asn	Ala	His	Leu	Asn	Leu	Val	Thr	Ile	His	Pro	Trp	Val
145					150					155					160
Asp	Gly	Asn	Gly	Arg	Met	Ala	Arg	Leu	Leu	Met	Asn	Tyr	Ile	Gln	Phe
				165				170						175	
Cys	Tyr	His	Leu	Phe	Pro	Thr	Lys	Ile	Phe	Lys	Glu	Asp	Arg	Glu	Glu
			180					185					190		
Tyr	Ile	Leu	Ser	Leu	Arg	Gln	Cys	Gln	Asp	Glu	Glu	Thr	Asn	Gln	Val
		195				200						205			
Phe	Leu	Asp	Phe	Met	Val	Arg	Gln	Leu	Lys	Lys	Ser	Leu	Ser	Leu	Glu
	210					215					220				
Ile	Glu	Cys	Phe	Asn	Ala	Ser	Gln	Lys	Arg	Gly	Phe	Ser	Phe	Met	Phe
225					230					235					240

<210> 6434

<211> 91

<212> PRT

<213> B.fragilis

<400> 6434

Leu	Gln	Arg	Tyr	His	Pro	Cys	Gly	Ser	Arg	Lys	Arg	Gln	Leu	Pro	Gln
1				5					10					15	
Lys	His	Phe	Thr	Gly	Thr	Ala	Gly	Ser	Thr	Gln	Glu	Arg	Asn	Pro	Arg
			20					25					30		
Gly	Ser	Leu	Leu	Pro	Arg	Thr	Tyr	Arg	Ser	Tyr	His	Asn	Gly	Cys	Arg
		35					40					45			
Ser	Arg	Arg	Tyr	Ser	Ile	Ser	Val	Phe	Ala	Ser	Gln	Glu	Leu	Asn	Pro
	50					55					60				
Gln	Lys	Ser	Arg	Val	Leu	Leu	Ile	Leu	Gly	Leu	Thr	Lys	Thr	Asn	Asp
65					70					75					80
Trp	Lys	Gln	Ile	Gln	Gln	Tyr	Phe	Asn	Glu	Tyr					
				85					90						

<210> 6435

<211> 459

<212> PRT

<213> B.fragilis

<400> 6435

Leu	Ala	Tyr	His	Leu	Pro	Ile	Gln	Arg	Gln	Phe	Ile	Gln	Leu	Ser	Leu
1				5					10					15	
Pro	Lys	Ile	Lys	Lys	Lys	Asp	Met	Ile	Leu	Gln	Leu	Ala	Phe	Val	Leu
			20					25					30		
Thr	Ala	Ile	Ile	Ile	Gly	Ala	Arg	Leu	Gly	Gly	Ile	Gly	Leu	Gly	Val
		35					40					45			
Met	Gly	Gly	Val	Gly	Leu	Gly	Ile	Leu	Thr	Phe	Ala	Phe	Gly	Leu	Gln
	50					55					60				
Pro	Thr	Ala	Pro	Pro	Ile	Asp	Val	Met	Leu	Met	Ile	Ala	Ala	Val	Ile
65					70					75					80
Ser	Ala	Ala	Ser	Cys	Met	Gln	Ala	Ala	Gly	Gly	Leu	Asp	Tyr	Met	Val

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<210> 6436
<211> 327
<212> PRT
<213> B.fragilis
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<400> 6436
Leu Lys Thr Gln Thr Trp Arg Phe Met Lys Lys Leu Met Leu Leu Thr
1      5      10      15
Leu Leu Ser Thr Phe Ile Phe Tyr Ser Cys Ser Asp Asp Asp Ser Cys
20      25      30
Thr Thr Cys Lys Glu Asp Asn Gly Ser Leu Val Thr Pro Asp Leu Ser

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35	40	45
Val Thr Leu Ser Asp Thr	Gln Ser Pro Met Thr Gly	Val Leu Glu Ala
50	55	60
Tyr Pro Cys Gln Ala Gly	Gly Ala Ile Tyr Tyr Gly	Asn Tyr Ile Glu
65	70	75
Gly Lys Leu Thr Ser Phe	Pro Gly Met Tyr Tyr Leu	Gln Asn Gly Glu
85	90	95
Ile Tyr Gly Asp Lys Asn Arg	Glu Ile Ser Leu Pro Val Gly	Thr Tyr
100	105	110
Asn Met Ile Tyr Trp Gly Thr	Pro Lys Tyr Glu Glu Leu	Ile Tyr Ser
115	120	125
Asn Pro Val Val Val Ala	Pro Gln Ile Thr Ile Gly	Gly Asp Leu Ser
130	135	140
Gln Gln Tyr Phe Gly Leu Arg	Lys Val Ser Ala Asp Thr	Thr Tyr Tyr
145	150	155
Pro Val Phe Asp Leu Val Tyr	Thr Val Lys Pro Ala His	Ile Gly Thr
165	170	175
Glu Glu Leu Ser Ala Ala Met	Gln Arg Val Val Ala Gly	Leu Lys Val
180	185	190
Ile Val Lys Asn Lys Asn Asn	Gly Ile Leu Ser Ser Ser	Ile Ala Gly
195	200	205
Met Glu Val His Val Gly Gly	Ile Ala Glu Lys Leu Asn	Met Tyr Thr
210	215	220
Ala Ala Pro Val Asn Gln Thr	Lys Thr Val Ser Phe Pro	Leu Val Leu
225	230	235
Ser Ala Asp Gly Thr Gln Met	Ser Asn Ala Thr Val Met	Leu Phe Pro
245	250	255
Ser Ser Ala Lys Pro Met Phe	Lys Leu Ile Ile Lys Leu	Lys Asn Gly
260	265	270
Asn Thr Lys Val Tyr Gln Gln	Pro Leu Asn Ala Pro Leu	Lys Ala Asn
275	280	285
Asn Lys Leu Thr Leu Thr Leu	Thr Leu Gly Asp Ile Phe	Ser Glu Glu
290	295	300
Thr Ser Gly Gly Phe Thr Ile	Asp Asn Trp Gln Glu Glu	Asn Glu Thr
305	310	315
Ile Asp Ile Pro Thr Leu Glu		
325		

<210> 6437

<211> 83

<212> PRT

<213> B.fragilis

<400> 6437

Val Pro Glu Gln Gln Lys Val	Ala Gln Asp Phe Ala Met Ser	Glu Phe
1	5	10
Ser Leu Ile Leu Val Leu Gln	Lys Glu Asn Lys Gln Asn Ser	Asn Met
20	25	30
Thr Trp Gln Lys Tyr Lys Leu	Asn Leu Arg Asn Ser His	Leu Leu Glu
35	40	45
Glu Phe Phe Gln Ser Trp Arg	Asn Leu Thr Pro Cys Phe	His Pro Leu
50	55	60
Ser Thr Gln His Trp Val Arg	Asp Ala Ala Val Ser Ser	Asp Ile Ser
65	70	75
Ser Ala Arg		

<210> 6438

<211> 224

<212> PRT
 <213> B.fragilis

<400> 6438

Asn	Lys	His	Asn	Gln	Lys	Val	Glu	Met	Lys	Lys	Val	Cys	Leu	Ser	Leu
1			5						10					15	
Leu	Met	Gly	Leu	Met	Val	Gln	Met	Thr	Phe	Gly	Gln	Thr	Leu	Glu	Lys
			20					25					30		
Met	Gln	Trp	Phe	Asn	Glu	Pro	Glu	Gln	Trp	Glu	Ile	Lys	Asn	Asn	Val
		35					40					45			
Leu	Ser	Met	Ser	Val	Thr	Pro	Gln	Ser	Asp	Tyr	Trp	Arg	Ile	Ser	His
	50					55					60				
Tyr	Gly	Phe	Thr	Val	Asp	Asp	Ala	Pro	Phe	Tyr	Tyr	Ala	Thr	Tyr	Gly
65					70					75					80
Gly	Glu	Phe	Glu	Ala	Lys	Val	Lys	Val	Val	Gly	Glu	Tyr	Lys	Glu	Arg
				85					90					95	
Phe	Asp	Gln	Ala	Gly	Leu	Met	Leu	Arg	Ile	Asp	His	Glu	Asn	Tyr	Ile
			100					105					110		
Lys	Ala	Gly	Ile	Glu	Phe	Val	Asp	Gly	Lys	Phe	Asn	Leu	Ser	Thr	Val
		115					120					125			
Val	Thr	His	Lys	Thr	Ser	Asp	Trp	Ser	Val	Ile	Thr	Leu	Asp	Lys	Thr
	130					135						140			
Val	Pro	Tyr	Ile	Trp	Ile	Lys	Ala	Val	Arg	Arg	Leu	Asp	Ala	Val	Glu
145					150					155					160
Ile	Phe	Tyr	Ser	Phe	Asp	Asp	Lys	Thr	Tyr	Thr	Leu	Met	Arg	Asn	Ala
				165					170					175	
Trp	Leu	Gln	Asp	His	Ile	Pro	Val	Lys	Val	Gly	Leu	Met	Ala	Ala	Cys
			180					185					190		
Pro	Asp	Gly	Ser	Gly	Phe	Asn	Ala	Lys	Phe	Glu	Tyr	Phe	Gln	Val	Lys
		195					200					205			
His	Leu	Pro	Asp	Gln	Arg	Arg	Val	Glu	Trp	Leu	Lys	Lys	Asn	Ala	Glu
	210					215						220			

<210> 6439

<211> 229

<212> PRT

<213> B.fragilis

<400> 6439

Ile	Leu	Asn	Lys	Ser	Arg	Ile	Leu	Arg	Lys	Ser	Pro	Arg	Ser	Ala	Leu
1			5						10					15	
Gly	Tyr	Ala	Trp	Gly	Asp	Phe	Phe	Ile	Thr	His	Ser	Arg	Met	Ile	Lys
			20					25					30		
Lys	Met	Lys	Gly	Ile	Trp	Pro	Glu	Val	Phe	Pro	Ala	Val	Phe	Glu	Glu
		35					40					45			
Gly	Gly	Leu	Tyr	Pro	Cys	His	Pro	Lys	Arg	Glu	Leu	Pro	Leu	Lys	Arg
	50					55					60				
Asp	Gly	Ala	Asn	Pro	Lys	Leu	Lys	Gly	Arg	Thr	Ile	Asn	Leu	Gln	Asn
65					70					75					80
Ala	Val	Lys	Lys	Cys	Asn	Arg	Leu	Cys	Pro	Leu	Arg	Tyr	Asp	Ser	Ile
				85					90					95	
Thr	Val	Ser	Glu	Gly	Arg	Phe	Met	Phe	Asn	Gly	Lys	Val	Thr	Ala	Pro
			100					105					110		
Gln	Val	Arg	Glu	Leu	Phe	Ile	Gln	Glu	Thr	Asp	Ser	Asp	Arg	Phe	Pro
		115					120					125			
Val	Thr	Leu	Pro	Val	Val	Leu	Asp	Pro	Gly	Glu	Ile	Asn	Ala	Lys	Ile
	130					135					140				
Gly	Asp	Ile	Val	Leu	Val	Glu	Gly	Ser	Gly	Leu	Asn	Glu	Glu	Met	Met
145					150					155					160

Gln Thr Leu Met Ala Leu Asp Glu Phe Arg Gly Arg Asp Phe Thr Gly
 165 170 175
 Lys Glu Ile Asn Glu Ile Lys Glu Ala Phe Gly Gly Phe Val Leu Glu
 180 185 190
 Gln Ile Val Lys His Ala Gly Ser Pro Val Gly Asn Tyr Leu Tyr Glu
 195 200 205
 Ala Tyr Gln Asn Lys Leu Asn Glu Lys Gln Gln Ala Glu Ala Arg Lys
 210 215 220
 Thr Leu Gly Ile Gly
 225

<210> 6440

<211> 123

<212> PRT

<213> B.fragilis

<400> 6440

Leu Ile Asn Lys Gly Val Met Lys Asn Tyr Gln Lys Lys Ser Val Ala
 1 5 10 15
 Gln Asp Ala Arg Val Glu Leu His Asp Ser Leu Ala Leu Thr Gly Ala
 20 25 30
 Glu Val Ser Ile Asn His Leu Pro Ala Gly Ala Gly Val Pro Phe Val
 35 40 45
 His Ser His Lys Gln Asn Glu Ile Tyr Gly Ile Leu Ser Gly Lys
 50 55 60
 Gly Phe Ile Thr Ile Asp Gly Glu Lys Ile Glu Leu Gln Ala Gly Asp
 65 70 75 80
 Trp Leu Arg Ile Ala Pro Asp Gly Lys Arg Gln Ile Ser Ala Ala Ser
 85 90 95
 Asp Ser Pro Ile Gly Phe Ile Cys Ile Gln Val Lys Ala Gly Ser Leu
 100 105 110
 Glu Gly Tyr Thr Met Thr Asp Gly Val Val Gln
 115 120

<210> 6441

<211> 314

<212> PRT

<213> B.fragilis

<400> 6441

Asn Lys Asn Lys Met Lys Glu Lys Asp Leu Ile Arg Phe Met Asp Arg
 1 5 10 15
 Met Ile Glu Glu Arg Lys Ala Glu Tyr Ala Leu Gly Thr Ala His Ile
 20 25 30
 Tyr Gln Ala Ser Arg Asn Ala Leu Ser Ala Phe Leu Lys Ala His Asp
 35 40 45
 Ile Pro Phe Lys Arg Val Arg Pro Glu Leu Leu Lys Gln Phe Glu Arg
 50 55 60
 Phe Leu Arg Arg Arg Gly Asn Ser Trp Asn Thr Val Ser Thr Tyr Met
 65 70 75 80
 Arg Val Leu Arg Ala Val Tyr Asn Arg Ala Val Asp Arg Arg Leu Ala
 85 90 95
 Pro His Val Pro His Leu Phe Lys Ala Val Tyr Thr Gly Thr Gln Ala
 100 105 110
 Asp Ile Lys Arg Ala Leu Lys Ala Glu Glu Met Gly Gln Leu Leu Asp
 115 120 125
 Thr Lys Cys Thr Arg Lys Gln Ser Glu Leu Leu Gln Lys Thr His His
 130 135 140
 Leu Phe Val Leu Met Phe Leu Leu Arg Gly Leu Pro Phe Val Asp Leu

145 150 155 160
 Ala Tyr Ile Gln Lys Lys Asp Leu Asn Gly Asn Ile Leu Thr Tyr His
 165 170 175
 Arg Arg Lys Thr Gly Arg Gln Ile Thr Ile Thr Val Thr Lys Asp Ala
 180 185 190
 Met Asn Ile Ile Arg Glu Tyr Met Asp Thr Thr Thr Glu Ser Pro Tyr
 195 200 205
 Leu Phe Pro Ile Leu Ser Ala Glu Gly Gly Glu Asp Thr Ile Tyr Arg
 210 215 220
 Glu Tyr Gln Gln Ala Leu Arg Ile Phe Asn Tyr Gln Leu Thr Lys Leu
 225 230 235 240
 Gly Glu Leu Leu Gly Leu Thr Thr Glu Leu Thr Ser Tyr Thr Ala Arg
 245 250 255
 His Thr Trp Ala Thr Leu Ala Tyr Tyr Leu Glu Val His Pro Gly Ile
 260 265 270
 Ile Arg Glu Ala Met Gly His Ser Ser Ile Lys Val Thr Glu Thr Tyr
 275 280 285
 Leu Lys Pro Phe Asn Ile Lys Lys Leu Asp Glu Thr Asn Leu Ser Ile
 290 295 300
 Ile Ser Tyr Ala Lys Arg Ser Phe Glu Gly
 305 310

<210> 6442
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 6442
 Asn Met His Asn Met Asp Asn Lys Gln Glu Arg Thr Val Val His Val
 1 5 10 15
 Glu Tyr Asn Gly Gln His Tyr Tyr Phe Gly Ser Leu Ser Ala Ile Tyr
 20 25 30
 Thr Lys Phe Ser Pro Lys Asp Leu Gly Ile Ala Leu Gly Thr Leu Arg
 35 40 45
 Asn Tyr Gly Leu Lys Glu Glu Lys Pro Tyr Gln Asn Ser Leu Cys Thr
 50 55 60
 Ile Arg Lys Gly Phe Leu Ile Thr Met Pro Lys Lys
 65 70 75

<210> 6443
 <211> 91
 <212> PRT
 <213> B.fragilis

<400> 6443
 Pro Val Cys Lys Asp Lys Pro Phe Pro Leu Leu Ser Gln Met Ile Thr
 1 5 10 15
 Ile Glu Lys Met Asn Glu Gln Gln Leu Phe Ile Lys Ile Gly Asp Lys
 20 25 30
 Ile Lys Glu Ile Arg Leu Glu Lys Gly Ile Ser Gln Gln Asp Leu Ala
 35 40 45
 Ala Lys Cys Asn Phe Glu Lys Ala Asn Met Ser Arg Ile Glu Ala Gly
 50 55 60
 Arg Thr Asn Leu Thr Ile Lys Asn Ala Tyr Lys Ile Ser Leu Ala Leu
 65 70 75 80
 Gly Val Arg Leu Lys Asp Leu Leu Asp Val Glu
 85 90

<210> 6444

<211> 60
 <212> PRT
 <213> B.fragilis

<400> 6444

Thr	Asp	Leu	Asn	Lys	Lys	Thr	Leu	Gly	Arg	Arg	Glu	Phe	Leu	Ile	Gly
1				5					10					15	
Cys	Cys	Leu	Tyr	Arg	Lys	Glu	Pro	Ile	Lys	Pro	Thr	Asn	Ile	Met	Lys
			20					25					30		
Glu	Phe	Met	Leu	Ile	Ala	Ser	Leu	Val	Leu	Ser	Phe	Cys	Ile	Leu	Ile
		35					40					45			
Leu	Cys	Arg	Asp	Tyr	Ile	Val	Phe	Met	Leu	Lys	Lys				
	50					55					60				

<210> 6445
 <211> 153
 <212> PRT
 <213> B.fragilis

<400> 6445

Arg	Met	Ala	Lys	Ile	Glu	Asn	Lys	Thr	Lys	Glu	Asn	Pro	Lys	Leu	Glu
1				5					10					15	
Gln	Asn	Lys	Leu	Ser	Asp	Gly	Arg	Ile	Ser	Leu	Tyr	Leu	Glu	Tyr	Tyr
			20					25					30		
Leu	Gly	Arg	Glu	Glu	Lys	Pro	Val	Leu	Asp	Ala	Asn	Gly	Asn	Gln	Val
		35					40					45			
Tyr	Tyr	Glu	Asp	Gly	Lys	Met	Gln	Gly	Lys	Pro	Lys	Phe	Ser	Val	Lys
	50					55					60				
His	Asn	Arg	Arg	Lys	Glu	Asn	Leu	Asn	Leu	Tyr	Leu	Met	Asp	Lys	Pro
65					70					75					80
Arg	Thr	Pro	Ala	Lys	Arg	Gln	Gln	Asn	Lys	Glu	Thr	Leu	Glu	Leu	Ala
				85					90					95	
Thr	Lys	Ile	Arg	Ala	Glu	Arg	Glu	Gln	Glu	Phe	Lys	Glu	Ser	Met	Leu
			100				105						110		
Gly	Tyr	Arg	Leu	Lys	Lys	Asp	Cys	Thr	Ile	Asn	Phe	Leu	Asp	Tyr	Phe
		115				120						125			
Gln	Ala	Tyr	Ile	Asp	Ser	Tyr	Thr	Lys	Lys	Asp	Cys	Ala	Trp	Cys	Lys
	130					135					140				
Leu	His	Leu	Ala	Val	Ser	Lys	Thr	Ser							
145					150										

<210> 6446
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 6446

Ser	Ile	Gln	Asn	His	Ser	Gln	Ser	His	Tyr	Ile	Leu	Gly	Lys	Trp	Glu
1				5					10					15	
Gly	Arg	Cys	Trp	Asp	Ile	Glu	Asp	Phe	Ile	Ile	Ser	Leu	Asn	Tyr	Gln
			20					25					30		
Ser	Lys	Leu	Gln	Leu	Thr	Ile	Tyr	Pro	Gln	Gln	Tyr	Leu	Ala	Gln	Ser
		35					40					45			
Glu	Arg	Glu	Val	Gln	Leu	Gln	Thr	Asn	Ser	Asn	Asn	Asn	Thr	Asn	
	50					55					60				

<210> 6447
 <211> 848
 <212> PRT

<213> B.fragilis

<400> 6447

Thr	Asn	Arg	Lys	Met	Lys	Asn	Ala	Ile	Val	Ser	Leu	Leu	Leu	Leu	Leu
1				5					10					15	
Met	Val	Thr	Gln	Tyr	Val	Thr	Ala	Gln	Lys	Lys	Val	Ile	Lys	Ile	Ala
			20					25					30		
Cys	Ile	Gly	Asn	Ser	Ile	Thr	Tyr	Gly	Val	Gly	Thr	Arg	Asn	Pro	Ala
		35					40					45			
Lys	Asp	Ser	Tyr	Pro	Ala	Val	Leu	Gly	Gln	Met	Leu	Gly	Asp	Gly	Tyr
	50					55					60				
Glu	Val	Arg	Asn	Phe	Gly	Val	Ser	Ala	Arg	Thr	Met	Leu	Met	Lys	Gly
65				70						75				80	
Asp	His	Pro	Tyr	Met	Lys	Glu	Glu	Arg	Tyr	Arg	Gln	Ala	Leu	Ala	Tyr
				85					90					95	
Asn	Pro	Asp	Ile	Val	Thr	Ile	Lys	Leu	Gly	Thr	Asn	Asp	Thr	Lys	Pro
			100					105					110		
Gln	Asn	Trp	Arg	Tyr	Lys	Ser	Asp	Phe	Lys	Lys	Asp	Met	Glu	Thr	Met
	115						120					125			
Ile	Arg	Thr	Ile	Arg	Ala	Leu	Pro	Ser	Lys	Pro	Glu	Ile	Tyr	Leu	Cys
130						135						140			
Tyr	Pro	Ile	Pro	Ala	Tyr	Ala	Val	Gln	Trp	Gly	Ile	Asn	Asp	Ser	Thr
145					150					155				160	
Ile	Val	His	Gly	Val	Met	Pro	Val	Ile	Asp	Gln	Leu	Ala	Ala	Lys	Tyr
			165						170					175	
Arg	Leu	Lys	Val	Ile	Asp	Leu	His	Thr	Pro	Leu	Ile	Gly	Met	Lys	Glu
			180					185					190		
Cys	Phe	Ala	Asp	His	Val	His	Pro	Asn	Glu	Lys	Ala	Ala	Ala	Cys	Ile
	195						200					205			
Ala	Arg	Val	Ile	Tyr	Arg	Gln	Leu	Thr	Gly	Lys	Glu	Ala	Pro	Glu	His
	210					215					220				
Val	Ser	Gln	Pro	Phe	Pro	Gly	His	Lys	Ser	Lys	Trp	Gln	Gly	Phe	Asp
225				230						235				240	
Gln	Tyr	Thr	Phe	Thr	Tyr	Gln	Asp	Arg	Gln	Ala	Ile	Val	Val	Cys	Pro
			245						250					255	
Glu	Arg	Ala	Ala	Ala	Gly	Asn	Pro	Trp	Ile	Trp	Arg	Pro	Ala	Phe	Phe
		260						265					270		
Gly	Ala	Phe	Ala	Ser	Val	Asp	Glu	Ala	Leu	Leu	Lys	Arg	Gly	Phe	His
	275						280					285			
Val	Ala	Tyr	Tyr	Asp	Leu	Thr	His	Leu	Tyr	Gly	Ser	Pro	Arg	Ala	Arg
	290					295					300				
Lys	Ser	Gly	Thr	Asp	Phe	Tyr	Trp	Asn	Met	Val	Gln	Met	Tyr	Gly	Leu
305					310					315				320	
Ser	Pro	Arg	Val	Thr	Leu	Glu	Gly	Phe	Ser	Arg	Gly	Gly	Leu	Phe	Ala
			325						330					335	
Tyr	Asn	Trp	Ala	Ala	Asp	His	Pro	Asp	Lys	Val	Ala	Cys	Ile	Tyr	Val
			340					345					350		
Asp	Ala	Pro	Val	Cys	Asp	Val	Phe	Ser	Trp	Pro	Gly	Arg	Ser	Ser	Gly
	355						360					365			
Asn	Ala	Gly	Leu	Trp	Lys	Gly	Met	Leu	Asp	Glu	Trp	Gly	Leu	Thr	Glu
370					375							380			
Ala	Arg	Met	Asn	Thr	Phe	Pro	Gly	Asn	Pro	Ile	Asp	Arg	Leu	Lys	Pro
385					390					395				400	
Leu	Ala	Asp	Ala	Arg	Ile	Pro	Val	Ile	Cys	Val	Cys	Gly	Asp	Ser	Asp
			405						410					415	
Arg	Val	Val	Pro	Phe	Ser	Glu	Asn	Ser	Ala	Val	Val	Arg	Gln	Arg	Tyr
			420					425					430		
Thr	Ala	Met	Gly	Ala	Pro	Phe	Glu	Leu	Ile	Leu	Lys	Pro	Gly	Val	Asp
		435					440					445			

His	His	Pro	His	Ser	Leu	Glu	Asn	Pro	Thr	Pro	Val	Val	Asp	Phe	Ile
450						455				460					
Val	Arg	His	Gln	Ala	Gly	Tyr	Glu	Ala	Gly	Gln	Cys	Tyr	Thr	Leu	Arg
465					470					475					480
Gly	Asn	Tyr	Gln	Asn	Ser	Tyr	Arg	Lys	Phe	Glu	Lys	Glu	Arg	Val	Gly
				485					490					495	
Thr	Val	Ala	Phe	Leu	Gly	Gly	Ser	Ile	Thr	Glu	Met	Lys	Gly	Trp	Arg
			500					505					510		
Asp	Met	Ile	Cys	Glu	Asp	Leu	Lys	Gln	Arg	Phe	Pro	Tyr	Thr	Lys	Phe
		515					520					525			
Thr	Phe	Val	Ala	Ala	Gly	Ile	Pro	Ser	Thr	Gly	Ser	Thr	Pro	Gly	Ala
	530					535					540				
Phe	Arg	Leu	Thr	Asp	Asp	Val	Leu	Ser	Lys	Gly	Lys	Val	Asp	Leu	Leu
545					550					555					560
Phe	Val	Glu	Ala	Ala	Val	Asn	Asp	Asp	Thr	Asn	Gly	Phe	Ser	Ala	Ile
				565					570					575	
Glu	Gln	Val	Arg	Gly	Met	Glu	Gly	Ile	Val	Arg	His	Ala	Leu	Val	Ser
			580					585					590		
Asn	Pro	Ser	Met	Asp	Ile	Met	Met	Leu	His	Phe	Ile	Tyr	Asp	Pro	Phe
		595					600					605			
Ile	Pro	Lys	Leu	Asp	Lys	Gly	Gln	Met	Pro	Asp	Val	Ile	Leu	Asn	His
	610					615					620				
Glu	Arg	Val	Ala	Asn	His	Tyr	Leu	Leu	Pro	Ser	Val	Asn	Leu	Ala	Ser
625					630					635					640
Glu	Ile	Ala	Ala	Arg	Met	Arg	Ser	Gly	Glu	Phe	Thr	Trp	Glu	Gln	Phe
				645					650					655	
Gly	Gly	Thr	His	Pro	Asn	Pro	Leu	Gly	His	Ala	Tyr	Tyr	Ala	Ala	Thr
			660					665					670		
Ile	Asn	Lys	Val	Leu	Asp	Glu	Met	Tyr	Ala	Pro	Cys	Ala	Thr	Ala	Lys
		675					680					685			
Asp	Ala	Ala	Lys	Pro	His	Ala	Leu	Pro	Ala	Val	Pro	Leu	Asp	Ala	Tyr
		690					695				700				
Ser	Tyr	Thr	Asn	Gly	Arg	Leu	Val	Asp	Ile	Arg	Gln	Ala	His	Ile	Gly
705					710					715					720
Lys	Gly	Trp	Gln	Leu	Val	Ala	Pro	Trp	Thr	Pro	Arg	Leu	Ala	Ala	Glu
				725					730					735	
Thr	Arg	Pro	Gly	Phe	Val	Asp	Val	Pro	Met	Leu	Glu	Thr	Asn	Arg	Pro
			740					745					750		
Gly	Ala	Lys	Leu	Thr	Leu	Asp	Phe	Glu	Gly	Thr	Ala	Val	Gly	Ile	Phe
		755					760					765			
Cys	Val	Ser	Gly	Pro	Ala	Ala	Gly	Ile	Leu	Glu	Tyr	Ser	Val	Asp	Gly
	770					775					780				
Ala	Pro	Phe	Lys	Lys	Leu	Asp	Thr	Phe	Thr	Ala	Trp	Ser	Gly	Gly	Leu
785					790					795					800
Tyr	Ile	Pro	Trp	Val	Tyr	Met	Phe	Asp	Thr	Glu	Leu	Pro	Met	Gly	Lys
				805					810					815	
His	Arg	Leu	Thr	Leu	Arg	Met	Ser	Lys	Asp	His	His	Pro	Gln	Ser	Lys
			820					825					830		
Gly	Thr	Ser	Cys	Gln	Ile	Arg	Gln	Phe	Val	Val	Asn	Asp	Ser	Cys	Glu
		835					840					845			

<210> 6448

<211> 73

<212> PRT

<213> B.fragilis

<400> 6448

Arg	Arg	Thr	Leu	Glu	Leu	Trp	Asp	Arg	Asp	Val	Glu	Arg	Trp	Ile	Asn
1				5					10					15	

Ser Glu Arg Val Pro Val Tyr Ser Pro Ile Thr Tyr Phe Leu Tyr Asp
 20 25 30
 Leu Pro Arg Trp Asp Gly Lys Asp Tyr Ile Arg Ala Leu Ala Arg Tyr
 35 40 45
 Val Arg Thr Phe Arg Arg Ile Gly Tyr Lys Arg Thr Glu Ala Leu Cys
 50 55 60
 Phe Val His Ser Asp Gln Gln Ser Gln
 65 70

<210> 6449

<211> 397

<212> PRT

<213> B.fragilis

<400> 6449

Thr Leu Met Lys Lys Leu Met Ala Met Leu Leu Leu Ala Gly Ser Ile
 1 5 10 15
 Gln Gly Val Tyr Ala Gln Lys Thr Glu Lys Lys Glu Met Phe Leu Glu
 20 25 30
 Asn Lys Ser Leu Tyr Glu Glu Leu Thr Asn Val Gln Lys Lys Thr Asp
 35 40 45
 Lys Phe Asn Leu Tyr Leu Asn Met Gln Gly Ser Phe Asp Ala Asn Phe
 50 55 60
 Arg Asp Gly Phe Asp Glu Gly Val Phe Lys Met Arg Gln Leu Arg Ile
 65 70 75 80
 Glu Ala Lys Gly Asn Leu Asn Ser Trp Leu Ser Tyr Arg Tyr Arg Gln
 85 90 95
 Arg Leu Asn Arg Ser Asn Glu Gly Gly Gly Met Ile Asp Asn Ile Pro
 100 105 110
 Thr Ser Ile Asp Tyr Ala Gly Ile Gly Val Lys Leu Asn Asp Gln Phe
 115 120 125
 Ser Phe Phe Ala Gly Lys Gln Cys Thr Ala Tyr Gly Gly Phe Glu Phe
 130 135 140
 Asp Leu Asn Pro Ile Asp Ile Tyr Gln Tyr Ser Asp Met Ile Glu Asn
 145 150 155 160
 Met Ser Asn Phe Met Thr Gly Leu Asn Ile Gly Tyr Asn Ile Thr Pro
 165 170 175
 Thr Gln Gln Leu Asn Leu Gln Ile Leu Asn Ser Arg Asn Ser Ser Phe
 180 185 190
 Asp Lys Thr Tyr Gly Ile Thr Glu Asp Ser Glu Gly Lys Leu Pro Asp
 195 200 205
 Leu Lys Ser Gly Lys Met Pro Leu Val Tyr Thr Leu Asn Trp Asn Gly
 210 215 220
 Asn Phe Asn Glu Val Phe Lys Thr Arg Trp Ser Ala Ser Val Met Ser
 225 230 235 240
 Glu Ala Lys Gly Lys Asn Leu Tyr Tyr Tyr Ala Val Gly Asn Glu Leu
 245 250 255
 Asn Leu Asp Lys Phe Asn Met Phe Val Asp Phe Met Tyr Ser Gln Glu
 260 265 270
 Gly Ile Asp Arg Asn Gly Thr Ile Thr Gly Ile Val Gly Asn Ala Gly
 275 280 285
 Gly His Asn Ala Phe Asn Ala Gly Tyr Leu Ser Val Val Thr Lys Leu
 290 295 300
 Asn Tyr Arg Phe Leu Pro Lys Trp Asn Ala Phe Val Lys Gly Met Tyr
 305 310 315 320
 Glu Thr Ala Ser Val Thr Lys Ala Ala Asp Gly Ile Glu Lys Gly Asn
 325 330 335
 Tyr Arg Thr Ser Trp Gly Tyr Leu Ala Gly Val Glu Phe Tyr Pro Met
 340 345 350

Lys Thr Asn Leu His Phe Phe Leu Thr Tyr Val Gly Arg Ser Tyr Asp
 355 360 365
 Phe Thr His Arg Ala Lys Val Leu Gly Gln Glu Asn Tyr Ser Thr Asn
 370 375 380
 Arg Leu Ser Leu Gly Phe Ile Tyr Gln Leu Pro Met Phe
 385 390 395

<210> 6450
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 6450
 Val Thr Arg Lys Asn Asn Ile Gly Arg Asn Ile Leu Ser Ser Gln Glu
 1 5 10 15
 Ile Ser Asp Ser Tyr Glu Arg Lys Asn Ile Lys Tyr Arg Asp Arg Pro
 20 25 30
 Ser Met Gln Leu Leu Pro Gly Leu Gln Asn Thr Pro Ser Ala Gly Lys
 35 40 45
 Cys Asn Arg Pro Val Lys Glu Arg Ser Gly Thr Ala Asn Tyr
 50 55 60

<210> 6451
 <211> 178
 <212> PRT
 <213> B.fragilis

<400> 6451
 Thr Glu Arg Lys Lys Asn Met Glu Asn Val Ile Gln Ile Gln Tyr Tyr
 1 5 10 15
 Gln Ser Pro Cys Gly Glu Leu Ile Leu Gly Ala Tyr Arg Glu Lys Leu
 20 25 30
 Cys Leu Cys Asp Trp Lys Ile Glu Glu Arg Arg Ile Ile Ile Asp Arg
 35 40 45
 Arg Ile Gln Lys Glu Leu Gln Ala Ser Tyr Lys Glu Gly Ile Ser Glu
 50 55 60
 Val Ile Thr Arg Thr Ile Gly Gln Leu Asp Glu Tyr Phe Ala Gly Arg
 65 70 75 80
 Arg Thr Thr Phe Asp Ile Pro Leu Leu Leu Val Gly Thr Asp Phe Gln
 85 90 95
 Lys Thr Val Trp Asn Glu Leu Leu Asn Ile Pro Tyr Gly Lys Thr Ile
 100 105 110
 Ser Tyr Ala Gly Leu Ser Gln Lys Leu Gly Asn Pro Lys Ala Ile Arg
 115 120 125
 Ala Ile Ala Ser Ala Asn Gly Ala Asn Pro Ile Ser Ile Leu Val Pro
 130 135 140
 Cys His Arg Val Ile Gly Ser Asp Arg Lys Leu Val Gly Tyr Gly Gly
 145 150 155 160
 Gly Leu Pro Ala Lys Lys Ile Leu Leu Asp Leu Glu Ser Ser Asp Arg
 165 170 175
 Leu Phe

<210> 6452
 <211> 200
 <212> PRT
 <213> B.fragilis

<400> 6452

Cys Val Asn Leu Asp Arg Asn Asn Lys His Thr Ile Ile Met Lys Lys
 1 5 10 15
 Ser Leu Val Tyr Thr Lys Thr Gly Asp Lys Gly Thr Thr Gly Leu Ile
 20 25 30
 Gly Gly Thr Arg Val Pro Lys Thr His Ile Arg Leu Glu Ala Tyr Gly
 35 40 45
 Thr Val Asp Glu Leu Asn Ser Asn Leu Gly Leu Leu Ala Thr Tyr Leu
 50 55 60
 Met Asp Glu His Asp Leu Asn Phe Val Gln Ser Val Gln Asp Lys Leu
 65 70 75 80
 Phe Ala Ile Gly Ser His Leu Ala Thr Asp Gln Glu Lys Val Gln Leu
 85 90 95
 Asn Asp Val Ser Ile Ile Thr Pro Ala Glu Val Glu Ala Ile Glu Arg
 100 105 110
 Glu Ile Asp Ala Ala Asp Glu Ile Leu Pro Pro Leu His Ser Phe Ile
 115 120 125
 Ile Pro Gly Gly Ser Arg Gly Ser Ala Val Cys His Val Cys Arg Thr
 130 135 140
 Val Cys Arg Arg Ala Glu Arg Arg Ile Leu Ala Leu Ser Glu Ser Cys
 145 150 155 160
 Thr Ile Ser Ala Asp Leu Leu Ala Tyr Ile Asn Arg Leu Ser Asp Tyr
 165 170 175
 Leu Phe Val Leu Ser Arg Lys Met Asn Phe Asn Glu Gly Lys Asp Glu
 180 185 190
 Ile Phe Trp Asn Asn Ser Cys Lys
 195 200

<210> 6453
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 6453
 Glu Ile Asn Asp His Leu Thr Tyr His Ile Pro Ala Ile Tyr Ala Leu
 1 5 10 15
 His Ser Lys Cys Thr Glu Phe Pro Asp Glu Thr Ser Arg Arg Val Thr
 20 25 30
 Lys Ile Thr Phe Tyr Phe Leu Phe Leu Pro Lys Asp Leu Thr Thr Ala
 35 40 45
 Lys Asn Ile Asn Ile Arg Ile Phe Ser Thr Ala Ile Asp Phe His Tyr
 50 55 60
 Ile Gln Ser Leu Gln Ser Leu Thr Phe Arg Ser His Thr Pro
 65 70 75

<210> 6454
 <211> 92
 <212> PRT
 <213> B.fragilis

<400> 6454
 Arg Arg Ala Asp Pro Arg Thr Leu Pro Glu Leu Leu Ile Glu Lys His
 1 5 10 15
 Asp Ile Leu Ile Glu Lys Ile Gly Thr Arg Leu Lys Thr His Ala Thr
 20 25 30
 Glu Thr Asp Ile Ala Arg Leu Phe Ile Ala Leu Val Glu Tyr Arg Phe
 35 40 45
 Met Arg Lys Cys Pro Ile Lys Thr Phe Arg Asn Ala Cys Thr Thr Ser
 50 55 60
 Leu Met Asn Lys Lys Ser Phe Met Lys Glu Val Phe Arg Lys His Thr

Pro Leu Ser Glu Arg Glu Gln Leu Val Leu Asp Leu Leu Ala Lys Glu
 165 170 175
 Pro Glu Gln Cys Val Thr Lys Leu Glu Lys Glu Ser Gly Leu Lys Asn
 180 185 190
 Ile Leu Thr Val Ile Lys Ser Leu Leu Asp Lys Glu Ala Leu Phe Val
 195 200 205
 Lys Glu Glu Leu Arg Arg Thr Tyr Lys Pro Lys Thr Glu Ala Arg Val
 210 215 220
 Arg Leu Ala Ala Asp Ala Ser Gly Glu Glu Asn Leu Arg Arg Ile Phe
 225 230 235 240
 Asp Glu Leu Glu Arg Ala Pro Lys Gln Leu Ala Leu Leu Met Lys Tyr
 245 250 255
 Val Glu Leu Ser Gly Val Leu Gly Asp Gly Ala Ser Lys Glu Val Ser
 260 265 270
 Lys Lys Glu Leu Leu Gln Arg Ala Ser Ala Ser Pro Ala Ile Phe Asn
 275 280 285
 Gly Leu Val Glu Lys Gln Ile Phe Glu Val Tyr Tyr Gln Glu Ile Gly
 290 295 300
 Arg Leu Asn Arg Leu Val Gly Lys Thr Val Glu Leu Asn Val Leu Asn
 305 310 315 320
 Glu His Gln Gln Arg Ala Tyr His Glu Phe Met Gln Ser Phe Gln Glu
 325 330 335
 Lys Asn Val Cys Leu Leu His Gly Val Thr Ser Ser Gly Lys Thr Glu
 340 345 350
 Val Tyr Ile His Leu Ile Glu Glu Thr Leu Arg Gln Gly Arg Gln Val
 355 360 365
 Leu Tyr Leu Leu Pro Glu Ile Ala Leu Thr Thr Gln Ile Thr Glu Arg
 370 375 380
 Leu Lys Arg Val Phe Gly Ser Arg Val Gly Asn Leu Ser Leu Gln Val
 385 390 395 400
 Pro Arg Arg Arg Glu Ser Arg Asp Leu Ala Lys Ala Val Asp Gly Gly
 405 410 415
 Gly Leu Arg His His Ser Gly Gly Thr Leu Phe Gly Val Pro Pro Val
 420 425 430
 Ser Glu Ser Arg Thr Gly His Cys Gly Arg Gly Thr Arg Lys Tyr Val
 435 440 445

<210> 6457

<211> 328

<212> PRT

<213> B.fragilis

<400> 6457

Lys Thr Lys Glu Glu Tyr Ser Met Ile Lys Lys Leu Cys Ile Ile Leu
 1 5 10 15
 Leu Ser Val Cys Thr Val Ala Pro Val Met Ala Gln Gln Tyr Ser Ser
 20 25 30
 Ser Asp Asp Ala Ser Phe Ala Pro Lys Lys Gly Gln Trp Gln Val Ser
 35 40 45
 Met Val Met Gly Ser Ser Gln Met Phe Asn Asn Asn Thr Glu Asn Tyr
 50 55 60
 Leu Leu Pro Thr Tyr Trp Asn Gly Gln Asn Phe Ser Phe Pro Asn Val
 65 70 75 80
 Gly Leu Gly Asn Asn Thr Ser Gly Asn Gln Ser Ser Asp Pro Ala Thr
 85 90 95
 Tyr Leu Gln Leu Gly Asp Leu Asn Ser Asn Asn Leu Val Asn Ile Ile
 100 105 110
 Gly Ile Gln Gly Lys Tyr Phe Leu Thr Asp Arg Trp Asp Val Asn Leu
 115 120 125

Met Phe Ser Met Asn Ile Gly Val Thr Pro Lys Lys Asp Tyr Ile Glu
 130 135 140
 Gly Asp Lys Thr Val Thr Asp Met Gln Ile Pro Ala Leu Gln Tyr Leu
 145 150 155 160
 Glu Gly Arg Ile Lys Asn Asn Trp Ser Val Asn Ile Gly Ser Asn Tyr
 165 170 175
 Tyr Phe Asn Thr Lys Asn Glu Arg Ile Asn Leu Tyr Val Gly Gly Leu
 180 185 190
 Leu Gly Trp Gln Met Gly Arg Ile Glu Thr Thr Leu Pro Tyr Thr Gly
 195 200 205
 Ile Met Val Ser Asp Lys Asp Met Asn Thr Asp Gly Thr Asp Thr Asp
 210 215 220
 Leu Gln Pro Thr Pro Asp Glu Asn Gly Gln Asp Asn Gly Pro Val Val
 225 230 235 240
 Asp Asp Asn Asp Val Thr Gly Thr Pro Leu Glu Val Tyr Ile Pro Asn
 245 250 255
 Ser Arg Ala Gly Gln Ile Phe Gly Leu Arg Ala Ala Thr Val Ala Gly
 260 265 270
 Ile Glu Tyr Ser Ile Gly Lys Gly Leu Ile Leu Gly Phe Glu Val Gln
 275 280 285
 Pro Val Ala Tyr Arg Tyr Asp Met Ile Gln Ile Ile Pro Lys Gly Thr
 290 295 300
 Pro Val Tyr Lys Val Gly His His Asn Ile Asn Leu Phe Ala Leu Pro
 305 310 315 320
 Asn Leu Lys Leu Gly Phe Arg Phe
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<210> 6458

<211> 323

<212> PRT

<213> B.fragilis

<400> 6458

Val Met Lys Glu Leu Lys Arg Leu Ser Phe Val Val Val Thr Leu Leu
 1 5 10 15
 Leu Ser Thr Met Met Ala Phe Ala Gln Lys Pro Asn Ile His Ile Leu
 20 25 30
 Ala Thr Gly Gly Thr Ile Ala Gly Thr Gly Gly Ser Ala Thr Ser Thr
 35 40 45
 Asn Tyr Thr Ala Gly Gln Val Ala Ile Ser Thr Leu Leu Asp Ala Val
 50 55 60
 Pro Glu Leu Lys Asp Ile Ala Asn Val Thr Gly Glu Gln Ile Val Arg
 65 70 75 80
 Ile Ala Ser Gln Asp Met Ser Asp Glu Val Trp Leu Ile Leu Ala Lys
 85 90 95
 Lys Ile Asn Gln Leu Leu Lys Arg Pro Asp Ile Asp Gly Ile Val Ile
 100 105 110
 Thr His Gly Thr Asp Thr Met Glu Glu Thr Ala Tyr Phe Leu Asn Leu
 115 120 125
 Thr Val Lys Ser Asn Lys Pro Val Val Leu Val Gly Ala Met Arg Pro
 130 135 140
 Ser Thr Ala Leu Ser Ala Asp Gly Pro Leu Asn Leu Tyr Asn Ala Val
 145 150 155 160
 Val Thr Ala Gly Ala Lys Glu Ser Ile Gly Lys Gly Val Leu Ile Ala
 165 170 175
 Met Asn Gly Leu Ile Leu Gly Ala Glu Ser Ala Ile Lys Met Asn Thr
 180 185 190
 Ile Asp Val Gln Thr Phe Gln Ala Pro Asn Ser Gly Ala Leu Gly Tyr
 195 200 205

Ile Phe Asn Gly Lys Val Phe Tyr Asn Gln Ala Pro Leu Lys Lys His
 210 215 220
 Thr Thr Gln Ser Val Phe Asp Val Thr Asn Leu Asn Ser Leu Pro Lys
 225 230 235 240
 Val Gly Ile Val Tyr Ser Tyr Ser Asn Ile Asp Pro Asp Met Val Thr
 245 250 255
 Pro Leu Leu His Asp Tyr Lys Gly Ile Ile His Ala Gly Val Gly
 260 265 270
 Asn Gly Asn Phe His Lys Asn Ile Leu Pro Val Leu Leu Glu Ala Arg
 275 280 285
 Lys Lys Gly Ile Leu Val Val Arg Ser Ser Arg Val Pro Thr Gly Pro
 290 295 300
 Thr Thr Met Asp Ala Glu Val Asp Asp Thr Gln Tyr Gln Phe Leu Leu
 305 310 315 320
 Leu Arg Asn

<210> 6459

<211> 392

<212> PRT

<213> B.fragilis

<400> 6459

Lys Lys Gly Glu Lys Lys Asn Lys Arg Ser His Lys His Phe Tyr Phe
 1 5 10 15
 Gln Arg Ile Asn Arg Ile Leu Ala Glu Thr Phe Lys Thr Val Asn Ile
 20 25 30
 Met Thr Ser Lys Asp Asn Tyr Cys Val Ile Met Gly Gly Gly Ile Gly
 35 40 45
 Ser Arg Phe Trp Pro Phe Ser Arg Lys Thr Met Pro Lys Gln Phe Leu
 50 55 60
 Asp Phe Phe Gly Thr Gly Arg Ser Leu Leu Gln Gln Thr Phe Asp Arg
 65 70 75 80
 Phe Asn Lys Ile Ile Pro Thr Glu Asn Ile Leu Ile Val Thr Asn Ala
 85 90 95
 Ile Tyr Ala Asp Leu Val Lys Glu Gln Leu Pro Glu Leu Asp Pro Lys
 100 105 110
 Gln Ile Leu Leu Glu Pro Ala Arg Asn Thr Ala Pro Cys Ile Ala
 115 120 125
 Trp Ala Ser Tyr His Ile Arg Ala Leu Asn Pro Asn Ala Asn Ile Val
 130 135 140
 Val Ala Pro Ser Asp His Leu Ile Leu Lys Glu Gly Glu Phe Leu Ala
 145 150 155 160
 Ala Ile Glu Lys Gly Leu Asp Phe Val Ser Lys Ser Asp Lys Leu Leu
 165 170 175
 Thr Leu Gly Ile Lys Pro Asn Arg Pro Glu Thr Gly Tyr Gly Tyr Ile
 180 185 190
 Gln Ile Ala Glu Gln Glu Gly Asp Asn Phe Tyr Lys Val Lys Thr Phe
 195 200 205
 Thr Glu Lys Pro Glu Leu Glu Leu Ala Lys Val Phe Val Glu Ser Gly
 210 215 220
 Glu Phe Tyr Trp Asn Ser Gly Leu Phe Met Trp Asn Val Asn Thr Ile
 225 230 235 240
 Ile Lys Ala Gly Glu Thr Leu Leu Pro Glu Leu Ala Ser Lys Leu Ala
 245 250 255
 Pro Gly Arg Glu Ile Tyr Gly Thr Pro Glu Glu Lys Asp Phe Ile Glu
 260 265 270
 Glu Asn Phe Pro Ala Cys Pro Asn Val Ser Ile Asp Phe Gly Ile Met
 275 280 285

Glu Lys Ala Asp Asn Val Tyr Val Ser Leu Gly Asp Phe Gly Trp Ser
 290 295 300
 Asp Leu Gly Thr Trp Gly Ser Leu Tyr Asp Leu Ser Pro Lys Asp Glu
 305 310 315 320
 Gln Arg Asn Val Thr Leu Lys Cys Asp Ser Leu Ile Tyr Asn Ser Asn
 325 330 335
 Asp Asn Ile Val Val Leu Pro Lys Gly Lys Leu Ala Val Ile Glu Gly
 340 345 350
 Leu Glu Gly Phe Leu Val Ala Glu Ser Asp Asn Val Leu Leu Ile Cys
 355 360 365
 Lys Lys Asp Glu Glu His Ala Ile Arg Lys Tyr Val Asn Asp Ala Gln
 370 375 380
 Met Lys Leu Gly Glu Asp Tyr Ile
 385 390

<210> 6460
 <211> 197
 <212> PRT
 <213> B.fragilis

<400> 6460
 Leu Phe Met Glu Ser Glu Lys Glu Lys Met Gly Thr Gly Arg Leu Tyr
 1 5 10 15
 Asp Ala Asn Tyr Asp Thr Glu Leu Ile Ala Glu Arg Gln Ala Cys Lys
 20 25 30
 Glu Leu Cys Tyr Thr Leu Asn His Leu Pro Pro Ser Gln Ile Ala Glu
 35 40 45
 Arg Glu Ala Ile Ile Arg Arg Leu Phe Cys Lys Thr Lys Glu Arg Phe
 50 55 60
 Leu Leu Glu Gln Pro Phe Tyr Cys Asp Tyr Gly Tyr Asn Ile Glu Ile
 65 70 75 80
 Gly Glu Asn Phe Tyr Ala Asn Met Asn Cys Val Ile Leu Asp Glu Ala
 85 90 95
 Lys Val Thr Phe Gly Asp Asn Val Phe Ile Ala Pro Ser Cys Gly Phe
 100 105 110
 Tyr Thr Ala Gly His Pro Leu Asp Val Glu Gln Arg Asn Arg Gly Leu
 115 120 125
 Glu Tyr Ala Arg Pro Ile Arg Val Gly Asn Asn Val Trp Ile Gly Ala
 130 135 140
 Gln Val Cys Val Leu Pro Gly Val Thr Ile Gly Asp Asn Thr Val Ile
 145 150 155 160
 Gly Ala Gly Ser Val Val Asn Arg Asp Ile Pro Ala Asn Val Ile Ala
 165 170 175
 Ala Gly Asn Pro Cys Arg Val Ile Arg Glu Ile Thr Glu Glu Asp Lys
 180 185 190
 Thr Lys Tyr Leu Leu
 195

<210> 6461
 <211> 462
 <212> PRT
 <213> B.fragilis

<400> 6461
 Arg His Met Glu Lys Gln Asn Asn His Ile Asp Arg Arg Gly Phe Leu
 1 5 10 15
 Lys Ile Val Gly Ile Ser Ala Ala Thr Thr Thr Ala Ala Leu Tyr Gly
 20 25 30
 Cys Gly Ser Gly Thr Lys Ser Ser Gln Gly Arg Asn Ala Ser Ser Pro

35	40	45
Val Pro Thr Asp Gln Met Thr Tyr Arg Ser Val Gly Gly Ile Lys Asp		
50	55	60
Lys Val Ser Leu Leu Gly Tyr Gly Cys Met Arg Trp Pro Thr Val Pro		
65	70	75
Ser Pro Glu Gly Lys Gly Asp Leu Ile Asn Gln Glu Ala Val Asn Glu		
	85	90
Leu Val Asp Tyr Ala Ile Ala His Gly Val Asn Tyr Phe Asp Thr Ser		
	100	105
Pro Val Tyr Val Gln Gly Trp Ser Glu Lys Ala Thr Gly Ile Ala Leu		
	115	120
Lys Arg His Pro Arg Glu Lys Leu Tyr Ile Ala Thr Lys Leu Ser Asn		
	130	135
Phe Ser Asn Phe Ser Arg Glu Asn Ser Leu Ala Met Tyr His Gln Ser		
145	150	155
Phe Lys Asp Met Gln Val Glu Tyr Phe Asp Tyr Tyr Leu Leu His Ala		
	165	170
Ile Gly Gly Gly Gly Met Lys Val Phe Asn Glu Arg Tyr Ile Asp Asn		
	180	185
Gly Met Leu Asp Phe Leu Leu Lys Glu Arg Glu Ala Gly Arg Ile Arg		
	195	200
His Leu Gly Trp Ser Phe His Gly Asp Val Glu Val Phe Asp Gln Val		
	210	215
Leu Ala Met His Asp Thr Ala Lys Trp Asp Phe Val Gln Ile Gln Leu		
225	230	235
Asn Tyr Val Asp Trp Arg His Ala Thr Gly Asn Asn Val Asn Ala Glu		
	245	250
Tyr Leu Tyr Gly Glu Leu Ala Lys Arg Asn Ile Ala Ala Val Ile Met		
	260	265
Glu Pro Leu Leu Gly Gly Arg Leu Ser Asn Val Pro Glu His Ile Val		
	275	280
Gly Arg Leu Lys Gln Arg Arg Pro Glu Asp Ser Val Ala Ser Trp Ala		
	290	295
Phe Arg Phe Ala Gly Ser Pro Glu Leu Val Leu Thr Val Leu Ser Gly		
305	310	315
Met Thr Tyr Met Glu His Leu Gln Asp Asn Ile Arg Thr Tyr Ser Pro		
	325	330
Leu Val Pro Leu Thr Asp Asp Asp Lys Glu Tyr Leu Glu Glu Thr Ala		
	340	345
Gln Leu Met Met Gln Tyr Pro Thr Ile Pro Cys Asn Asp Cys Lys Tyr		
	355	360
Cys Met Pro Cys Pro Tyr Gly Ile Asp Ile Pro Ala Ile Leu Val His		
	370	375
Tyr Asn Lys Cys Val Asn Glu Gly Asn Ile Pro Gln Ser Gln Ser Ser		
385	390	395
Glu Asn Tyr Lys Glu Ala Arg Arg Ala Phe Leu Val Gly Tyr Asp Arg		
	405	410
Ser Val Pro Lys Leu Arg Gln Ala Ser His Cys Ile Gly Cys Asn Gln		
	420	425
Cys Thr Pro His Cys Pro Gln Ser Ile His Ile Pro Glu Glu Leu His		
	435	440
Arg Ile Asp Arg Phe Val Glu Gln Leu Lys Gln Gly Thr Leu		
450	455	460

<210> 6462

<211> 61

<212> PRT

<213> B.fragilis

<400> 6462

Lys Ala Met Glu Gln Gly Val Trp Gln Glu Ile Glu Gln Leu Tyr Gln
 1 5 10 15
 Lys Phe Gln Lys Leu Gly Ile Asn Glu Ala Val Asp Tyr Asp Ser Thr
 20 25 30
 Thr Cys Ile Leu Leu Leu Pro Ile Pro Gln Pro Leu Lys Ala Gln Arg
 35 40 45
 Leu Arg Asn Leu Ile Arg Ser Phe Phe Ser Thr Arg Glu
 50 55 60

<210> 6463

<211> 66

<212> PRT

<213> B.fragilis

<400> 6463

Leu Val Ile Cys Ala Gln Glu Pro Asp Asn Leu Gln Lys Thr Leu Thr
 1 5 10 15
 Met Leu Ile Glu Glu Arg Tyr Lys Asp Glu Asp Thr Gly Ser Gly Gly
 20 25 30
 Val Asn Ser Leu Pro Lys Leu Glu Leu Ser Tyr Ser Ala Gly Val Cys
 35 40 45
 Phe Phe Leu Leu Lys Gln Ala Lys Arg Thr Ile Ile Asn Leu Lys Ile
 50 55 60
 Lys Lys
 65

<210> 6464

<211> 385

<212> PRT

<213> B.fragilis

<400> 6464

Lys Asp Ser Arg Phe Ile Phe Gly Tyr Pro Leu Arg Trp Leu Arg Val
 1 5 10 15
 Arg Gly Gly Lys Lys Ala Val Asn Gln Ala Leu Pro Val Ile Asp Met
 20 25 30
 Asn Glu Asp Tyr Pro Glu Lys Glu Ile Val Leu Gln Asp Ile Ala Asp
 35 40 45
 Ile Ser Tyr Ile Pro Leu Glu Thr Asn Asp Glu Phe Leu Phe Asp Gly
 50 55 60
 Ser Val Glu Val Val Thr Asp Gln Tyr Val Ile Thr Lys Gly His Arg
 65 70 75 80
 Gly Asn Asp Val Cys Phe Phe Ser Arg Gln Gly Lys Ala Leu Asn Arg
 85 90 95
 Ile His Arg Val Gly Asn Gly Pro Gly Glu Tyr Lys Asp Ile Gly Ser
 100 105 110
 Met Asp Val Asn Pro Ala Asn Gly Glu Leu Tyr Leu Lys Glu Met Asn
 115 120 125
 Arg Gln Gln Ile His Val Tyr Ser Leu Asp Gly Lys Phe Lys His Ser
 130 135 140
 Phe Thr Phe Pro Glu Gly Lys Arg Met Ser Arg Met Cys Leu Phe Ser
 145 150 155 160
 Pro Asp Tyr Leu Ile Ala Glu Gln Glu Ser Lys Val Pro Asp Asp Gln
 165 170 175
 Asp Ala Asn Phe Tyr Pro Tyr Leu Leu Val Ser Thr Arg Asp Gly His
 180 185 190
 Leu Asp Ser Leu Asp Tyr Val Gln Lys Arg Asn Ile Leu Val Lys Leu
 195 200 205

Ile Val Asn Ala Glu Asn His Ser Tyr Ala Tyr Leu Leu Glu Pro Ser
 210 215 220
 Leu Ile Arg Asn Gly Ser Arg Phe Tyr Ile Gly Asn Pro Asp Ser Asp
 225 230 235 240
 Thr Leu Phe Ala Met Asn Pro Asp Arg Thr Leu Glu Pro Leu Leu Val
 245 250 255
 Arg Thr Pro Ser His Ser Glu Glu Gly Asn Lys Tyr Gly Leu Phe Leu
 260 265 270
 Arg Gly Ala Ala Gly Ala Tyr Phe Leu Thr Lys Gln Pro Met Glu
 275 280 285
 Val Pro Met Asn Ser Ile Glu Ser Leu Asp Leu Lys Ser Glu Glu Trp
 290 295 300
 Leu Tyr Asp Cys Arg Thr Gln Glu Val Cys Arg Tyr Leu Leu Lys Asn
 305 310 315 320
 Lys Asp Asp Ala Ser Lys Arg Val Asp Gly Ile Met Phe Phe Cys Tyr
 325 330 335
 Pro Glu Asp Cys Gly Leu Ala Val Leu Lys Ser Glu Asp Leu Met Asp
 340 345 350
 Ala Tyr Glu Ala Gly Gln Leu Ser Gly Glu Leu Lys Glu Ile Ala Ala
 355 360 365
 Gly Leu Lys Ala Asp Asp Asn Pro Val Leu Met Leu Ile His Phe Lys
 370 375 380

Lys
385

<210> 6465
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 6465
 Ile Arg Lys Leu Met Tyr Trp Thr Leu Glu Leu Ala Ser Lys Leu Glu
 1 5 10 15
 Asp Ala Pro Trp Pro Ala Thr Lys Asp Glu Leu Ile Asp Tyr Ala Met
 20 25 30
 Arg Ser Gly Ala Pro Leu Glu Val Ile Glu Asn Leu Gln Glu Met Glu
 35 40 45
 Asp Glu Gly Glu Ile Tyr Glu Ser Ile Glu Asp Ile Trp Pro Asp Tyr
 50 55 60
 Pro Ser Lys Glu Asp Phe Phe Phe Asn Glu Glu Glu Tyr
 65 70 75

<210> 6466
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 6466
 Ser Lys Ile Ser Phe Phe Thr Ser Arg Met Asp Ser Ser Gly Glu Ser
 1 5 10 15
 Arg Asp Thr Cys Phe Phe Val Asn Tyr Lys Arg Gly Leu Thr Leu Pro
 20 25 30
 Lys Thr Glu Leu Asp Ser Met Ser Lys Arg Lys Leu Thr Lys Phe
 35 40 45
 Glu Glu Glu Pro Leu Asn Phe Gly Thr Gly Met Trp Asn Val Gly Leu
 50 55 60
 Thr Pro Asn Val Cys Arg Cys Thr Leu Leu Leu Pro Thr Ser Cys Met
 65 70 75 80
 Thr Cys Leu Val Gly Thr Gly Arg Thr Thr Ser Gly Arg Trp Pro Ala

[illegible]

<400> 6467

Leu 1	Leu	Pro	Ser	Leu 5	His	Arg	Gln	Leu	Tyr 10	Lys	Glu	Arg	Leu	Arg 15	Met
Val	Gln	Ile	Ala 20	Leu	Ser	Arg	Phe	Lys 25	Asp	Phe	Leu	Lys	Glu 30	Gln	Tyr
Pro	Leu	Tyr 35	Glu	Cys	Asn	Ile	Lys 40	Pro	Lys	Phe	Ile	Thr 45	Lys	Asp	Met
Ile	Val 50	Gln	Phe	Val	Asp	Tyr 55	Leu	Gln	Ser	Arg	Ser	Val	Gly	Glu	Gly
Ala 65	Lys	Ser	Ile	Tyr	Gln 70	Arg	Phe	Lys	Lys	Val 75	Ile	Arg	Tyr	Ala	Ile
Glu	His	Asp	Val	Ile 85	Leu	Lys	Asp	Pro	Cys 90	Lys	Glu	Val	Ile	Cys	Lys
Val	Asp	Asp	Pro 100	Met	Leu	Arg	Lys	Asp 105	Val	Leu	Ser	Leu	Glu 110	Glu	Ile
Gln	Ser	Leu 115	Ile	Asn	Cys	His	Tyr 120	Glu	Asn	Glu	Asn	Pro 125	Met	Val	Arg
Arg	Ala 130	Phe	Ile	Phe	Cys	Leu	Tyr 135	Phe	Gly	Leu	Arg	Phe 140	Cys	Asp	Val
Lys 145	Asp	Leu	Thr	Tyr	Lys 150	Asn	Val	Asp	Tyr	Ser	Asn	Lys	Leu	Leu	Lys 160
Phe	Glu	Gln	Asn	Lys 165	Thr	Lys	Gly	His	Ser	Ser	Ala	Ser	Gly	Val	Val
Ile	Pro	Leu	Asn 180	Asp	Gly	Leu	Leu	Ser 185	Ile	Ile	Gly	Glu	Ala 190	Pro	Ala
Asn	Gly	Asn 195	Lys	Asp	Val	Leu	Ile	Phe 200	Asp	Leu	Pro	Thr 205	Tyr	Glu	Ser
Cys	Ser 210	Lys	Ser	Leu	Arg	Arg	Trp 215	Val	Lys	Arg	Ala	Gly	Ile	Asp	Lys
His	Ile	Ser	Trp	His	Cys	Ala	Arg	His	Ser	Phe	Ala	Val	Asn	Ile	Leu

225 230 235 240
 Asn Asn Gly Ala Asn Ile Lys Thr Ile Ala Gly Leu Leu Gly His Ser
 245 250 255
 Gly Leu Lys His Thr Lys Lys Tyr Thr Arg Ala Val Asp Lys Leu Lys
 260 265 270
 Glu Glu Ala Ile Asn Ser Leu Pro Glu Leu Lys Leu
 275 280

<210> 6468

<211> 808

<212> PRT

<213> B.fragilis

<400> 6468

Ile Ala Thr Ser Gln Ser Leu His Arg Met Gln Pro Met Tyr Pro Ala
 1 5 10 15
 Leu Ser Ala Ile His Pro His Thr Gly Arg Thr Ala Ser His Arg Ser
 20 25 30
 Phe Cys Arg Thr Ala Gln Ala Gly Asp Thr Met Met Glu Lys Ile Ile
 35 40 45
 Asp Leu Leu His Ser Gly Gly Tyr Ser Cys Val Ile Gly Asn Gly Thr
 50 55 60
 Glu Ile Arg Thr Phe Thr Gln Arg Gly Val Ala Asp Leu Tyr Asp Leu
 65 70 75 80
 Phe Arg Gln Asp Pro Ser Phe Met Lys Gly Ala Gly Ile Ala Asp Lys
 85 90 95
 Val Ile Gly Lys Ala Ala Ala Ser Leu Met Val Leu Gly Gly Ile Arg
 100 105 110
 Gln Val Tyr Ala Asp Val Ile Ser Gln Pro Ala Leu Ala Leu Leu Cys
 115 120 125
 Asn Ala Asn Ile Glu Val Ser Tyr Val Arg Leu Val Pro Phe Ile Glu
 130 135 140
 Asn Arg Asp Lys Ser Gly Trp Cys Pro Leu Glu Thr Ala Cys Tyr Gly
 145 150 155 160
 Ile Glu Ser Ile Gln Glu Ile Phe Arg Ile Ile Glu Asn Phe Leu Ser
 165 170 175
 Lys Ile Arg Ile Lys Lys Asn Leu Leu Gly Ile Leu Leu Val Cys Ala
 180 185 190
 Phe Leu Ser Ser Ser Leu Gln Ala Gln Val Arg Lys Asp Thr Thr Gln
 195 200 205
 Ala Gly His Asn Tyr Glu Ile Asp Gly Val Val Val Thr Gly Thr Arg
 210 215 220
 Asn Glu Thr Asp Ile Arg His Leu Pro Met Thr Ile Ser Val Val Asn
 225 230 235 240
 Arg Glu Thr Ile Gly Gln Arg Ser Glu Pro Ser Leu Leu Pro Thr Leu
 245 250 255
 Thr Glu Gln Val Pro Gly Leu Phe Thr Thr Ser Arg Gly Val Met Gly
 260 265 270
 Tyr Gly Val Ser Asn Gly Ala Ala Gly Gly Ile Ser Leu Arg Gly Ile
 275 280 285
 Gly Gly Ser Pro Thr Thr Gly Leu Leu Val Leu Ile Asp Gly His Pro
 290 295 300
 Gln Tyr Met Gly Leu Met Gly His Pro Ile Ala Asp Ala Tyr Gln Ser
 305 310 315 320
 Met Leu Ala Glu Lys Val Glu Val Val Arg Gly Pro Ala Ser Val Leu
 325 330 335
 Tyr Gly Ser Asn Ala Met Gly Gly Val Ile Asn Ile Val Thr Arg Arg
 340 345 350
 Gln Arg Glu Asp Gly Val Arg Thr Gly Val Arg Leu Gly Tyr Gly Ser

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<210> 6469

[illegible]

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<210> 6470
<211> 716
<212> PRT
<213> B.fragilis
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Ser	Asn	Tyr	Gly	Met	Asn	Thr	Lys	Ser	Lys	His	Pro	Leu	Leu	Ser	Phe
1				5					10					15	
Pro	Lys	Pro	Gln	Phe	Thr	Thr	Gly	Met	Ile	Arg	Leu	Ser	Ile	Thr	Leu
			20					25					30		
Leu	Phe	Ser	Thr	Leu	Cys	Ile	Gly	Ser	Phe	Gly	Gln	Lys	Lys	Ser	Pro
		35					40					45			
Ile	Thr	Val	Glu	Thr	Leu	Leu	Glu	Glu	Met	Thr	Ser	Tyr	Asp	Glu	Met
	50					55					60				
Thr	Arg	Tyr	Pro	Thr	Leu	Pro	Tyr	Arg	Ser	Met	Gln	Gln	Ser	Ser	Tyr
65					70					75					80
Asp	Arg	Arg	Ser	Val	Ser	Pro	Asp	Arg	Pro	Gly	Trp	Phe	Ala	Asn	Asp
				85					90					95	
Asp	Gly	Glu	Gly	Phe	Ile	Arg	Leu	Glu	Glu	His	Asn	Gly	Arg	Lys	Glu
			100					105					110		
Lys	Val	Leu	Phe	Glu	Asp	Glu	Gly	Pro	Gly	Ala	Ile	Thr	Arg	Ile	Trp
		115					120					125			
Leu	Thr	Thr	Phe	Gly	Ser	Ile	His	Thr	Ile	Leu	Arg	Phe	Tyr	Phe	Asp
	130					135					140				
Gly	Lys	Asp	Glu	Pro	Gly	Trp	Val	Val	Pro	Ser	Tyr	Asp	Leu	Gln	Lys
145				150						155					160
Phe	Gly	Val	Arg	Gly	Leu	Lys	Lys	Gly	Leu	Ile	Glu	Pro	Asp	Asp	Lys
				165					170					175	
Trp	Ile	Arg	Gly	Ser	Leu	Ile	Tyr	Leu	Pro	Val	Thr	Tyr	Ala	Asp	Gly
			180					185					190		
Cys	Lys	Val	Thr	Met	Glu	Glu	Leu	Thr	Pro	Glu	Arg	Thr	Asn	Arg	His

[illegible]

Glu Ala Thr Gly Ala Ile Asn Leu Gly Met His Lys Pro Ile Asp Gly
 675 680 685
 Lys Phe Ile Leu Arg Ile Glu Leu Thr Gly Gln Asn Ala Leu Ser Thr
 690 695 700
 Gly Thr Leu Phe Gly Leu Asp Cys Ile Arg Ile Glu
 705 710 715

<210> 6471
 <211> 92
 <212> PRT
 <213> B.fragilis

<400> 6471
 His Asp Tyr Gly Phe Cys Lys Ile Ser Gly Arg Ser Leu Asn Asn Arg
 1 5 10 15
 Pro Phe Asp Lys Phe Pro Ile Glu Glu Cys Thr Tyr Gly Thr Pro His
 20 25 30
 Tyr Ile Thr Leu Glu Glu Lys Asp Lys Ile Phe Asn Ala Asp Leu Ser
 35 40 45
 Ala Thr Pro Gln Leu Ala Ile Gln Arg Asp Ile Phe Ile Phe Gln Thr
 50 55 60
 Leu Ile Gly Cys Arg Val Ser Asp Leu Tyr Arg Met Thr Gln Ser Arg
 65 70 75 80
 Pro Thr His Ala Thr Arg Thr Ser Asp Arg Lys Ala
 85 90

<210> 6472
 <211> 480
 <212> PRT
 <213> B.fragilis

<400> 6472
 Arg Tyr Ile Met Lys Glu Glu Leu Ser Lys Ala Thr Arg Thr Glu Ser
 1 5 10 15
 Asp Leu Ile Gly Glu Arg Glu Val Pro Glu Thr Ala Leu Tyr Gly Val
 20 25 30
 Gln Thr Leu Arg Gly Ile Glu Asn Phe Arg Ile Ser Lys Tyr His Leu
 35 40 45
 Cys Glu Tyr Pro Leu Phe Ile Asn Ala Leu Ala Ile Thr Lys Met Gly
 50 55 60
 Ala Ala Met Ala Asn Phe Glu Leu Gly Leu Leu Thr Glu Glu Gln Ala
 65 70 75 80
 Asn Ala Ile Leu Arg Ala Cys Lys Glu Ile Leu Glu Gly Lys His His
 85 90 95
 Asp Gln Phe Pro Val Asp Met Ile Gln Gly Gly Ala Gly Thr Thr Thr
 100 105 110
 Asn Met Asn Ala Asn Glu Val Ile Ala Asn Arg Ala Leu Glu Leu Met
 115 120 125
 Gly His Lys Arg Gly Glu Tyr Gln Tyr Cys Ser Pro Asn Asp His Val
 130 135 140
 Asn Arg Ser Gln Ser Thr Asn Asp Ala Tyr Pro Thr Ala Ile His Ile
 145 150 155 160
 Gly Met Tyr Tyr Thr His Leu Lys Leu Val Lys His Phe Lys Glu Val
 165 170 175
 Ile Asp Ala Phe Arg Arg Lys Gly Glu Glu Phe Ala His Val Ile Lys
 180 185 190
 Met Gly Arg Thr Gln Leu Glu Asp Ala Val Pro Met Thr Leu Gly Gln
 195 200 205
 Thr Phe Asn Gly Phe Ala Ser Ile Leu Gln Asp Glu Val Lys Asn Leu

210	215	220
Asp Phe Ala Ala Gln Asp Phe Leu Thr Val Asn Met Gly Ala Thr Ala		
225	230	235
Ile Gly Thr Gly Ile Thr Ala Glu Pro Glu Tyr Ala Ser Lys Cys Ile		240
	245	250
Ala Ala Leu Arg Lys Ile Thr Gly Leu Asp Ile Arg Leu Ala Asp Asp		255
	260	265
Leu Ile Gly Ala Thr Ser Asp Thr Ser Cys Leu Val Gly Tyr Ser Ser		270
	275	280
Ala Met Arg Arg Ile Ala Val Lys Met Asn Lys Ile Cys Asn Asp Leu		285
	290	295
Arg Leu Leu Ala Ser Gly Pro Arg Cys Gly Leu Gly Glu Ile Asn Leu		300
305	310	315
Pro Ala Met Gln Pro Gly Ser Ser Ile Met Pro Gly Lys Val Asn Pro		320
	325	330
Val Ile Pro Glu Val Met Asn Gln Ile Asp Tyr Lys Val Ile Gly Asn		335
	340	345
Asp Leu Cys Val Ala Met Ser Gly Glu Ala Ala Gln Met Glu Leu Asn		350
	355	360
Ala Met Glu Pro Val Met Ala Gln Cys Cys Phe Glu Ser Ala Asp Leu		365
	370	375
Leu Met Asn Gly Phe Asp Thr Leu Arg Thr Leu Cys Ile Asp Gly Ile		380
385	390	395
Thr Ala Asn Glu Glu Lys Cys Arg Lys Asp Val His Asn Ser Ile Gly		400
	405	410
Val Val Thr Ala Leu Asn Pro Val Ile Gly Tyr Lys Asn Ser Thr Lys		415
	420	425
Ile Ala Lys Glu Ala Gln Glu Thr Gly Lys Gly Val Tyr Glu Leu Val		430
	435	440
Leu Glu His Asp Ile Leu Ser Lys Glu Asp Leu Asp Thr Ile Leu Lys		445
	450	455
Pro Glu Asn Met Ile His Pro Val Lys Leu Asp Ile Lys Pro Asn His		460
465	470	475
		480

<210> 6473

<211> 355

<212> PRT

<213> B.fragilis

<400> 6473

Gly Ile Ile Ile Leu Leu Phe Phe Ala Val Arg Lys Lys Ser Ile Met	
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Asp Ser Phe Asp Lys Tyr Ile Ser Arg Asn Leu Pro Leu Val Ser Leu	
	10
	15
Ile Ser Ala Val Phe Ile Ile Tyr Pro Asn Ile Ala Cys Thr Pro Trp	
	20
	25
	30
Glu Leu Asn Ser Leu Glu Pro Ser Glu Tyr Leu Gly Phe Phe Ser Tyr	
	35
	40
	45
Phe Ile Tyr Arg Phe Leu Phe Phe Trp Gly Met Ile Gly Phe Leu Ile	
65	70
	75
Asn Tyr Asn Leu Arg Gln Ile Pro Thr Ala Leu Phe Arg Lys Arg Leu	
	80
	85
	90
	95
Thr His Asn Phe Leu Phe Ala Leu Thr Gly Tyr Leu Phe Phe Ala Ser	
	100
	105
	110
Val Ser Tyr Thr Ile Ser Ser His Gly Phe His Thr Asp Phe Leu Gly	
	115
	120
	125
Ser Thr Leu Ile Ser Gln Phe Phe Thr Leu Cys Phe Leu Cys Thr Leu	
	130
	135
	140
Val Gly Tyr Ile Ser Met Leu Tyr Thr Arg Gln Arg Glu Lys Glu Gln	

145 150 155 160
 Glu Ile Glu Arg Leu Arg Phe Glu Asn Leu Gln Ser Arg Cys Asp Ala
 165 170 175
 Leu Ala Asn Gln Val Asn Pro His Phe Phe Phe Asn Ser Leu Asn Gly
 180 185 190
 Ile Ser Ser Leu Ile Arg Lys Lys Asn Asp Glu Asn Thr Leu Thr Tyr
 195 200 205
 Val Asn Gln Leu Ser Asp Ile Phe Arg Tyr Ile Leu Gln Ser Asp Arg
 210 215 220
 Lys Gly Val Val Thr Leu Arg Glu Glu Leu Glu Phe Ile Gln Ser Phe
 225 230 235 240
 Arg Tyr Val Met Glu Val Arg Phe Ala Asn Lys Leu Ser Phe Thr Ile
 245 250 255
 Asp Val Asp Glu Ala Gln Lys Asp Val Leu Thr Leu Pro Val Leu Ser
 260 265 270
 Leu Leu Pro Leu Val Asp Asn Val Thr Val His Asn Arg Ile Asp Ser
 275 280 285
 Glu His Lys Met Asp Ile Ser Ile Arg Leu Asn Glu Gln Tyr Glu Leu
 290 295 300
 Val Val Ser Asn Pro Ile Tyr Pro Lys Leu Ser Pro Pro Asp Thr Asn
 305 310 315 320
 Gly Thr Gly Leu Ser Asn Leu Glu Asn Arg Phe Asn Leu Leu Met Asn
 325 330 335
 Lys Gln Ile Arg Ile Glu Thr Asp Glu Lys Val Phe Arg Val Tyr Leu
 340 345 350
 Pro Leu Ile
 355

<210> 6474

<211> 301

<212> PRT

<213> B.fragilis

<400> 6474

Val Thr Pro Met Lys Glu Arg Ile Leu Asn Ile Glu Thr Val His Gln
 1 5 10 15
 Cys Asn Cys Cys Leu Gly Cys Lys Thr Leu His Pro Leu Val Ser Val
 20 25 30
 Ile Asp Leu Ser Lys Ser Asp Leu Glu Gln Gln Ile Ile Lys Phe Asp
 35 40 45
 Phe Tyr Thr Ile Leu Met Met Glu Gly Glu Ile Asp Asp Ile Leu Tyr
 50 55 60
 Gly Arg Lys Tyr Tyr Asp Tyr Ser Asn Ala Ser Leu Val Phe Leu Thr
 65 70 75 80
 Pro Gly Glu Ser Ile Lys Ile Asn Lys Ser Lys Ala Leu Pro Ser Lys
 85 90 95
 Gly Trp Leu Leu Ala Phe His Pro Asp Leu Ile Ser Gln Thr Ser Leu
 100 105 110
 Gly Glu His Ile Lys Asp Tyr Ser Phe Phe Phe Tyr Asn Pro Glu Glu
 115 120 125
 Ala Leu His Leu Ser Gln Arg Glu Lys Ala Lys Ala Val Glu Cys Ile
 130 135 140
 Cys Asn Ile Glu Glu Glu Leu Arg His Ala Ile Asp Cys His Ser Gln
 145 150 155 160
 Ile Leu Ile Ser Arg Tyr Ile Glu Leu Leu Asp His Cys Asn Arg
 165 170 175
 Phe Tyr Glu Arg Gln Phe Ile Thr Arg Cys Glu Ala Asn Lys Lys Ile
 180 185 190
 Met Lys Lys Thr Asp Val Leu Leu Lys Asp Tyr Ile Leu Ser Gly Lys

195	200	205
Leu Lys Tyr Asn Thr Ser Pro Ser Leu Gly Tyr Cys Ala Lys Ile Leu		
210	215	220
Gln Leu Ser Ser His Tyr Phe Asn Asp Leu Leu Lys Phe Glu Ser Gly		
225	230	235
Lys Asn Ile Asp Glu Tyr Phe Glu Ser Lys Arg Leu Glu Met Ala Lys		
245	250	255
Ser Met Leu Leu Asp Ser Asn Asn Thr Val Ser Val Val Thr Glu Lys		
260	265	270
Leu Gly Tyr Pro Asn Ile Arg Tyr Phe Ser Arg Leu Phe Lys Arg Ile		
275	280	285
Thr Gly Val Ala Pro Asn Asn Tyr Arg Leu Ser Gln Asn		
290	295	300

<210> 6475

<211> 587

<212> PRT

<213> B.fragilis

<400> 6475

Lys Met Tyr Ile Glu Lys Ile Asn Ser Pro Lys Asp Ile Lys Glu Leu		
1	5	10
Ser Val Glu Gln Leu Ser Val Leu Ala Glu Glu Val Arg Thr Ala Leu		
20	25	30
Ile Arg Lys Leu Ser Glu His Gly Gly His Ile Gly Pro Asn Leu Gly		
35	40	45
Met Val Glu Thr Thr Ile Ala Leu His Tyr Val Phe Asn Ser Pro Ile		
50	55	60
Asp Lys Ile Val Phe Asp Val Ser His Gln Ser Tyr Val His Lys Met		
65	70	75
Leu Thr Gly Arg Met Ala Ala Phe Leu Asp Pro Ala Lys Tyr Asp Asp		
85	90	95
Val Thr Gly Tyr Thr Asn Pro Asp Glu Ser Glu His Asp Phe Phe Thr		
100	105	110
Ile Gly His Thr Ser Thr Ser Val Ser Leu Ala Met Gly Leu Ala Lys		
115	120	125
Gly Arg Asp Leu Thr Gly Gly Lys Glu Asn Ile Ile Ala Val Ile Gly		
130	135	140
Asp Gly Ser Leu Ser Gly Gly Glu Ala Leu Glu Gly Leu Asn Asn Ala		
145	150	155
Ala Met Leu Gly Ser Asn Met Ile Ile Ile Val Asn Asp Asn Asp Gln		
165	170	175
Ser Ile Ala Glu Asn His Gly Gly Leu Tyr Lys Gly Leu Lys Glu Leu		
180	185	190
Arg Asp Thr Asn Gly Glu Ser Pro Asp Asn Ile Phe Lys Ala Met Gly		
195	200	205
Leu Glu Tyr Tyr Tyr Leu Gly Asp Gly His Asp Val Ser Ala Leu Ile		
210	215	220
Lys Leu Phe Thr Pro Val Lys Asp Ile Asp Arg Ala Val Val Leu His		
225	230	235
Ile His Thr Ile Lys Gly Lys Gly Leu Lys Tyr Ala Glu Glu Asn Lys		
245	250	255
Glu Tyr Trp His Ala Gly Gly Pro Phe His Ile Glu Asp Gly Ser Pro		
260	265	270
Lys Gly Pro Gly Trp Pro Val Asn Glu Thr Val Arg Glu Ser Val Leu		
275	280	285
Asp Leu Ile Glu Lys Arg Ser Asp Val Val Ala Ile Thr Ala Gly Thr		
290	295	300
Pro Ser Val Ile Gly Phe Thr Glu Asp Tyr Arg Lys Arg Ala Gly Lys		

305 310 315 320
 Gln Phe Val Asp Val Gly Ile Ala Glu Glu His Ala Val Ala Met Ala
 325 330 335
 Ser Gly Ile Ala Arg Asn Gly Gly Thr Pro Ile Phe Gly Val Phe Ser
 340 345 350
 Pro Phe Leu Gln Arg Thr Tyr Asp Gln Leu Ser Ser Asp Leu Cys Leu
 355 360 365
 Asn Asn Asn Pro Ala Val Ile Met Val Phe Met Ala Ser Val Tyr Gly
 370 375 380
 Met Asn Ser Asn Thr His Leu Gly Ile Tyr Asp Ile Pro Met Ile Ser
 385 390 395 400
 His Ile Pro Asn Leu Val Tyr Leu Ala Pro Thr Ser Lys Glu Glu Tyr
 405 410 415
 Leu Ala Met Phe Lys Tyr Ala Thr Thr Gln Lys Ala His Pro Ile Ala
 420 425 430
 Ile Arg Ile Pro Met Met Met Pro Glu Thr Gly Ile Glu Asp Thr Thr
 435 440 445
 Asp Tyr Ser Leu Leu Asn Lys Tyr Gln Val Val Arg Lys Gly Ser Gly
 450 455 460
 Val Ala Ile Ile Ala Leu Gly Asp Phe Phe Glu Leu Gly Val Gln Ile
 465 470 475 480
 Ala Asp Lys Tyr Lys Ile Leu Thr Gly Asn Asp Val Thr Leu Ile Asn
 485 490 495
 Pro Lys Phe Ile Thr Gly Ile Asp Glu Leu Leu Glu Cys Leu Lys
 500 505 510
 Thr Asp His Glu Leu Val Leu Thr Leu Glu Asp Gly Ile Val Glu Gly
 515 520 525
 Gly Phe Gly Gln Thr Ile Ala Ser Phe Tyr Gly Leu Ser Asp Met Lys
 530 535 540
 Val Lys Asn Tyr Gly Ile Lys Lys Ser Phe Pro Thr Asp Phe Arg Pro
 545 550 555 560
 Glu Glu Leu Met Arg Glu Asn Gly Leu Ser Val Glu Gln Ile Val Glu
 565 570 575
 Asp Ile Lys Ser Val Cys Arg Glu His Val Met
 580 585

<210> 6476

<211> 221

<212> PRT

<213> B.fragilis

<400> 6476

Asn Tyr Ile Phe Val Pro Asn Phe Lys His Asn Leu Val Met Lys Lys
 1 5 10 15
 Ile Ile Ser Ala Leu Met Met Ala Val Cys Ile Gly Met Ala Met Pro
 20 25 30
 Ala Gln Ala Gln Leu Ile Lys Phe Gly Val Lys Gly Gly Val Asn Leu
 35 40 45
 Ala Lys Ala Asp Leu Asn Thr Ser Asp Phe Lys Thr Asp Asn Phe Thr
 50 55 60
 Gly Phe Phe Ile Gly Pro Met Ala Glu Val Thr Ile Pro Leu Ile Gly
 65 70 75 80
 Leu Gly Val Asp Ala Ser Leu Leu Phe Ser Gln Arg Gly Val Lys Val
 85 90 95
 Ser Ser Arg Asp Phe Ile Asp Pro Leu Ala Asp Ser Asp Pro Ile Ile
 100 105 110
 Gly Asn Arg Thr Ile Arg Gln Asn Gly Leu Asp Ile Pro Ile Asn Leu
 115 120 125
 Lys Tyr Thr Ile Gly Leu Gly Ser Ser Leu Gly Ile Tyr Val Ala Ala

130		135		140
Gly Pro Asp Phe Tyr Phe Asn Phe Ser Gly Asp Lys Val Tyr Glu Asn				
145		150		155
Tyr Gly Arg Leu Asn Lys Lys Asn Ala Gln Ile Gly Ile Asn Val Gly				160
	165		170	
Ala Gly Val Lys Leu Leu Arg His Leu Gln Val Gly Ala Asn Tyr Asn				175
	180		185	
Ile Pro Leu Asn Lys Thr Ala Glu Trp Lys Glu Ala Asp Phe Ser Tyr				190
	195		200	
Lys Thr Lys Met Trp Gln Ile Ser Ala Ala Tyr Ile Phe				205
	210		215	
				220

<210> 6477
 <211> 401
 <212> PRT
 <213> B.fragilis

<400> 6477

Lys Asn Val Met Phe Gln His Gln Phe Ile Asp Ser Leu Thr Gly Leu				
1	5		10	15
Leu Cys Phe Phe Gly Asn Leu Gly Arg Val Phe Ile Ser Asp Asn Arg				
	20		25	30
Ile Gln Cys Ser His His Thr Asp Thr Val Val Asn Ile Phe Pro Ala				
	35		40	45
Phe Phe Leu Ile Gly Arg Asp Ala Val Tyr Thr Gln Gly Thr Gln Arg				
	50		55	60
Ile Glu Thr Ile His Gln Gln Ile Gly Arg Phe Glu Thr Ala Leu Gly				
	65		70	75
His Asp Arg Phe His Arg Ile Gln Phe His Leu Gly Arg Phe Thr Thr				
	85		90	95
His Ser Tyr Thr Lys Val Val Thr Tyr Tyr Phe Ile Val Asn Leu Ile				
	100		105	110
His His Phe Gly Asn Asn Arg Ile Asp Leu Thr Arg His Asn Gly Arg				
	115		120	125
Thr Gly Leu His Gly Arg Gln Ile Asp Phe Ala Gln Pro Ala Thr Arg				
	130		135	140
Ala Gly Cys Gln Lys Ala Gln Val Ile Thr Tyr Leu Ile His Phe Tyr				
	145		150	155
Ser Tyr Thr Ala His Ser Arg Arg Val Thr Tyr Gln Thr Arg Ser Val				
	165		170	175
Gly Ser Ser Ser Tyr Gln Ile Ile Gly Gln Thr Asp Ile Gln Ser Gly				
	180		185	190
Asn Leu Pro Glu Ser Arg Tyr Ala Phe Ala Cys Ile Phe Arg Leu Gly				
	195		200	205
Gly Asp Ser Gly Ser Asp Gly Ser Ser Ser His Ile Asp Gly Gln Glu				
	210		215	220
Val Leu Ser Ser Lys Val Gln Val Leu Asp Phe Ile Leu Lys Asp Thr				
	225		230	235
Gly Lys Thr Ile Glu Arg Leu Ser Glu Arg His Arg His Arg Ile Phe				
	245		250	255
Gln Leu Gly Ala Pro His Leu Asp His Val Cys Lys Phe Phe Ala Leu				
	260		265	270
Ser Ser Glu Ser Ile Asp His Leu Leu Lys Met Phe His Gln Phe Glu				
	275		280	285
Val Arg Ile Ile His Thr Asp Met Asp Ser Gly Arg Ile Ser Val Ile				
	290		295	300
Gly Arg Leu Arg Thr Val Asn Met Ile Ile Gly Arg Thr Ile Leu Ile				
	305		310	315
Phe Pro Thr Phe Met Ser His Gln Leu Glu Cys Ala Val Gly Tyr His				

325 330 335
 Leu Val Gly Ile His Val Gly Gly Ser Ser Gly Ser Thr Leu Asp His
 340 345 350
 Val Tyr Arg Glu Leu Val Met Met Phe Pro Phe Gln Asn Phe Phe Thr
 355 360 365
 Cys Thr Lys Asn Gly Ile Cys Leu Leu Phe Gly Gln Gln Ser Lys Phe
 370 375 380
 Lys Val Ser His Ser Gly Ser His Leu Gly Asn Gly Gln Cys Ile Asp
 385 390 395 400
 Lys

<210> 6478

<211> 806

<212> PRT

<213> B.fragilis

<400> 6478

Phe Thr Tyr Ile Thr Phe Phe Leu Leu Thr Leu Lys Asn Arg Gly Met
 1 5 10 15
 Arg Lys Trp Thr Tyr Leu Val Ala Ala Leu Leu Val Gly Gly Ala Thr
 20 25 30
 Thr Thr Phe Thr Gly Cys Ile Asp Asn Asp Glu Pro Ala Gly Ile Glu
 35 40 45
 Gln Leu Arg Gly Ala Lys Ala Glu Phe Ile Lys Ala Lys Ala Ala Tyr
 50 55 60
 Glu Asp Ala Leu Thr Gln Ile Gln Leu Val Lys Val Glu Arg Glu Lys
 65 70 75 80
 Val Lys Leu Glu Lys Asp Gln Val Asn Leu Glu Leu Lys Lys Cys Ser
 85 90 95
 Leu Glu Val Glu Gln Ala Lys Thr Ala Glu Gln Lys Ala Phe Trp Glu
 100 105 110
 Ala Glu Ala Gln Lys Arg Thr Glu Glu Phe Lys Ala Lys Ile Leu Asp
 115 120 125
 Leu Gln Thr Leu Thr Ala Gln Ala Glu Tyr Asn Asn Lys Lys Ala Leu
 130 135 140
 Met Asp Ile Glu Val Ala Leu Leu Thr Met Lys Asp Asp Ala Tyr Thr
 145 150 155 160
 Ala Glu Ile Asn Lys Tyr Arg Ala Ala Leu Val Gly Tyr Thr Phe Lys
 165 170 175
 Ser Glu Ser Thr Thr Asn Gly Glu Thr Thr Ile Thr Thr Asn Ser Ser
 180 185 190
 Tyr Gly Ala Leu Ala Asp Leu Ala Glu Ala Lys Ser Ser Leu Met Lys
 195 200 205
 Ala Glu Val Ala Arg Ile Asn Phe Leu Ser Lys Asn Lys Tyr Tyr Pro
 210 215 220
 Glu Glu Leu Gln Leu Glu Arg Thr His Ala Ala Lys Thr Leu Glu Ile
 225 230 235 240
 Gln Met Ala Leu Met Glu Glu Tyr Lys Ala Leu Asp Ala Thr Gly Thr
 245 250 255
 Asp Ser Lys Ala Leu Ala Asp Lys Leu Lys Gly Tyr Lys Thr Asp Leu
 260 265 270
 Gln Ala Leu Asp Ala Lys Glu Asp Glu Ala Tyr Thr Lys Ile Glu Glu
 275 280 285
 Met Arg Lys Pro Ile Phe Pro Ile Asn Gln Gln Ile Ile Glu Glu Lys
 290 295 300
 Ile Lys Leu Asp Ala Thr Ser Ser Ala Tyr Thr Leu Ala Lys Ala Asp
 305 310 315 320
 Val Asp Pro Ala Leu Val Asn Gly Leu Tyr Ser Ala Leu Ser Thr Gly

325 330 335
 Glu Asp Glu Glu Lys Leu Val Glu Asp Leu Asp Lys Ile Phe Val Gln
 340 345 350
 Asp Ser Trp Asn Ala Glu Leu Leu Asn Tyr Gln Tyr Thr Met Lys Lys
 355 360 365
 Asp Val Val Ile Asn Asp Leu Ser Leu Asn Asn Lys Ala Thr Lys Ile
 370 375 380
 Gly Ala Ile Ala Asp Ala Ile Lys Ala Tyr Tyr Gln Gly Glu Asn Ser
 385 390 395 400
 Glu Ala Phe Asp Ala Ser Gly Lys Leu Leu Asp Ala Tyr Lys Thr Lys
 405 410 415
 Phe Glu Asn Glu Leu Lys Arg Leu Glu Ile Asp Lys Lys Pro Ala Tyr
 420 425 430
 Asp Gln Phe Lys Ser Asp Ser Thr Ala Trp Ile Asn Ala Tyr Val Ala
 435 440 445
 Tyr Val Ala Ala Leu Lys Ala Tyr Asn Asn Tyr Lys Gly Thr Asn Thr
 450 455 460
 Tyr Gln Ala Ile Thr Lys Glu Val Thr Thr Tyr Asn Ser Leu Lys Ala
 465 470 475 480
 Glu Asp Lys Lys Leu Glu Thr Ala Asn Ala Leu Arg Thr Ser Ile Leu
 485 490 495
 Gly Tyr Leu Gly Lys Arg Lys Ala Val Asp Gly Phe Asn Ala Glu Phe
 500 505 510
 Ala Thr Thr Tyr Lys Asp Ala Leu Thr Asp Ala Asn Leu Ala Thr Phe
 515 520 525
 Asn Glu Ala Ile Ala Thr Ala Val Ser Asp Gly Ile Ser Ser Leu Ile
 530 535 540
 Gly Asn Glu Thr Leu Ala Thr Ser Phe Asn Asp Lys Val Glu Gly Ser
 545 550 555 560
 Thr Leu Phe Ala Phe Leu Glu Ala Asn Gln Ala Leu Phe Gly Gly Ser
 565 570 575
 Glu Leu Asn Leu Glu Lys Ser Ile Glu Pro Lys Glu Ile Ser Ala Asn
 580 585 590
 Lys Tyr Asp Met Pro Lys Asn Val Ser Gln Leu Ile Asp Asn Pro Glu
 595 600 605
 Asn Asn Ser Gly Ser Phe Val Lys Tyr Thr Tyr Leu Ala Gln Glu Ser
 610 615 620
 Asn Tyr Leu Val Asn Leu Asp Lys Trp Gln Ala Leu Tyr Ala Lys Ile
 625 630 635 640
 Lys Ala Glu Ala Asp Pro Val Leu Ala Glu Val Asp Ala Ile Asn Glu
 645 650 655
 Lys Ile Ala Thr Leu Glu Ser Gln Ile Lys Asp Glu Asn Ala Ala Leu
 660 665 670
 Trp Gln Ala Glu Leu Ala Cys Tyr Leu Ile Lys Gly Asp Lys Ser Lys
 675 680 685
 Arg Gln Asn Glu Ile Phe Ser Glu Ser Asn Pro Tyr Lys Asn Tyr Tyr
 690 695 700
 Thr Ser Asn Glu Gln Glu Pro Leu Leu Gly Asn Val Val Thr Glu Tyr
 705 710 715 720
 Ser Lys Leu Glu Ala Glu Ile Ala Leu Val Gln Arg Ala Met Glu Asp
 725 730 735
 Gly Tyr Phe Tyr Tyr Thr Tyr Tyr Asp Ala Asn Ser His Thr Tyr Lys
 740 745 750
 Val Ser Glu Lys Ser Leu Asn Leu Thr Ser Leu Leu Glu Thr Gln Glu
 755 760 765
 Glu Ala Ile Thr Asp Ala Lys Lys Thr Val Glu Asp Ile Asp Asn Lys
 770 775 780
 Ile Ala Leu Phe Asp Lys Tyr Gly Tyr Thr Asn Ile Glu Gly Gln Glu
 785 790 795 800

Glu Tyr Leu Asp Leu Ser
805

<210> 6479
<211> 523
<212> PRT
<213> B.fragilis

<400> 6479

Lys	Thr	Arg	Ile	Met	Asn	Val	Ile	Ile	Tyr	Cys	Arg	Val	Ser	Ser	Asp	1	5	10	15
Glu	Gln	Thr	Leu	Gly	Ala	Ser	Leu	Asp	Val	Gln	Glu	Glu	Arg	Leu	Arg	20	25	30	
Lys	Tyr	Cys	Asn	Gln	Met	Gly	Tyr	Asn	Ile	Ile	Asn	Asn	Ile	Pro	Tyr	35	40	45	
Arg	Glu	Asp	Glu	Ser	Ala	Lys	Thr	Phe	Glu	Lys	Arg	Pro	Val	Ile	Gln	50	55	60	
Gly	Ile	Met	Ser	Tyr	Ile	Arg	Lys	Asn	Lys	Gly	Lys	Val	Asn	Lys	Leu	65	70	75	80
Leu	Phe	Leu	Arg	Trp	Asp	Arg	Tyr	Ser	Arg	Asp	Ile	Ile	Ser	Ala	Ser	85	90	95	
Glu	Asn	Leu	Lys	Glu	Leu	Leu	Lys	Leu	Gly	Val	Glu	Pro	Asn	Ala	Ile	100	105	110	
Glu	Ala	Pro	Leu	Asp	Phe	Asn	Ser	Asp	Thr	Trp	Pro	Leu	Leu	Leu	Gly	115	120	125	
Val	His	Ile	Gly	Ser	Ala	Gln	Cys	Asp	Asn	Ile	Lys	Arg	Ser	Lys	Ala	130	135	140	
Thr	Met	Asp	Gly	Ile	His	Gly	Thr	Leu	Ala	Lys	Gly	Lys	Cys	Ala	Asn	145	150	155	160
Lys	Ala	Pro	Arg	Gly	Tyr	Lys	Asn	Val	Arg	Ile	Ser	Lys	His	Glu	Thr	165	170	175	
His	Val	Glu	Ile	Asp	Thr	Asn	Thr	Ala	Pro	Phe	Ile	Gln	Ala	Met	Phe	180	185	190	
Lys	Glu	Val	Ala	Lys	Gly	Ile	Glu	Thr	Pro	Cys	Tyr	Ile	Arg	Arg	Lys	195	200	205	
Phe	Ala	Arg	Lys	Gly	Tyr	Asn	Ile	Pro	Glu	Ser	Ser	Phe	Leu	Glu	Met	210	215	220	
Leu	Arg	Asn	Lys	Phe	Tyr	Ile	Gly	Lys	Ile	Arg	Val	Pro	Ala	Tyr	Lys	225	230	235	240
Gly	Glu	Pro	Glu	Tyr	Val	Asn	Gly	Glu	His	Glu	Ala	Ile	Ile	Asp		245	250	255	
Glu	Glu	Thr	Phe	Tyr	Lys	Val	Gln	Glu	Ile	Leu	Asp	Gly	Lys	Arg	Lys	260	265	270	
Lys	Thr	Pro	Lys	Leu	Ser	Lys	Ala	Ile	Asn	Pro	Asp	Leu	Tyr	Leu	Arg	275	280	285	
Lys	Phe	Leu	Ile	Cys	Pro	Val	Cys	Gly	Cys	Ala	Leu	Thr	Gly	Ala	Thr	290	295	300	
Ser	Ser	Gly	Asn	Gly	Gly	Lys	Tyr	Thr	Tyr	Tyr	Phe	Cys	Cys	Asn	Asn	305	310	315	320
Gln	Lys	His	Ile	Arg	Met	Arg	Ala	Glu	Asn	Val	Asn	Glu	Glu	Phe	Ala	325	330	335	
Arg	Tyr	Thr	Ala	Gln	Leu	Lys	Pro	Asn	Lys	Thr	Val	Leu	Asn	Leu	Tyr	340	345	350	
Asn	Glu	Ile	Leu	Lys	Asp	Leu	Gln	Asn	Glu	Arg	Lys	Gly	Glu	Ser	Lys	355	360	365	
Lys	Glu	Val	Val	Ala	Leu	Gln	Asn	Glu	Leu	Ser	Thr	Val	Gln	Lys	Arg	370	375	380	
Ile	Asn	Ser	Ile	Glu	Asp	Lys	Tyr	Leu	Asp	Gly	Asp	Leu	Thr	Lys	Glu	385	390	395	400

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Glu	Tyr	Asn	Arg	Met	Leu	Glu	Arg	Tyr	Thr	Lys	Glu	Ala	Ser	Thr	Ile	
				405					410				415			
Gln	Gln	Gln	Val	Glu	Met	Arg	Glu	Asn	Pro	Asn	Arg	Ser	Asn	Ile	Glu	
				420					425				430			
Pro	Lys	Leu	Asn	Tyr	Ser	Ile	Asn	Leu	Ile	Asn	Asn	Ile	Asp	Ser	Tyr	
				435					440				445			
Ile	Arg	Asn	Ala	Ser	Val	Gly	Val	Lys	Ile	Lys	Leu	Ile	Ser	Ser	Met	
				450					455				460			
Phe	Pro	Glu	Lys	Ile	Glu	Phe	Asp	Gly	Lys	Thr	Tyr	Arg	Thr	Asn	Ser	
465				470				475				480				
Tyr	Asn	Lys	Val	Leu	Asp	Leu	Ile	Tyr	Gln	Gln	Thr	Asn	Glu	Leu	Arg	
				485					490				495			
Gly	Val	Glu	Lys	Lys	Ser	Gly	Glu	Ser	Phe	Ser	Thr	Phe	Ser	Ala	Ser	
				500					505				510			
Val	Pro	Arg	Pro	Gly	Val	Glu	Pro	Gly	Trp	Lys						
515				520												

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<210> 6480
<211> 339
<212> PRT
<213> B.fragilis
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<400> 6480															
Lys 1	Asn	Asn	Phe	Asn 5	Phe	Leu	Met	Lys	Ser 10	Gln	Tyr	Glu	Lys	Lys 15	Arg
Leu	Ile	Thr	Phe 20	Asp	Arg	Ile	Lys	Ile 25	Lys	Ser	Asn	Tyr	Lys 30	Tyr	Leu
Leu	Asn	Thr 35	Lys	Val	Lys	Phe	Asn 40	Glu	Met	Phe	His	Ser	Arg	Ser	Gly
Glu	Lys 50	Ile	Gly	Ile	Phe	Tyr 55	Ser	Ser	Lys	Asp	Asp 60	Ile	Asn	Ile	Pro
Tyr 65	Asn	Leu	Tyr	Ile	Ala	Val 70	Ser	Tyr	Ile	Lys	Gln	Thr	Leu	Thr	Leu 80
Glu	Phe	Ser	Ser	Lys 85	Ile	Leu	Lys	Glu	Lys 90	Tyr	Pro	Asp	Leu	Ile	Ser 95
Arg	Asp	Thr	Ile 100	Lys	Glu	Cys	Leu	Thr	Asn 105	Ile	Asn	Gln	Leu	His	Ile
Cys	Asp	Ile	Asp 115	Val	Asp	Ser	Ile	Leu	Ser	Asn	Gly	Ala	Ile	Thr	Ser
Val	Asp 130	Val	Thr	Tyr	Asp	Ala	Asn	Leu	Ile	Leu	Ser	Asp	Asn	Leu	Leu
Asn 145	Ile	Leu	Asn	Ser	Gln	Val	Thr	Asn	Tyr	Arg	Arg	Phe	Lys	Trp	Ala
His	Tyr	Asp	Lys	Glu 165	Gly	Ile	Thr	Phe	Thr	Lys	Asp	Val	Lys	Ser	Lys
Asp	Cys	Thr	Glu 180	Thr	Ile	Thr	Leu	Tyr	Asn	Lys	Glu	Lys	Glu	Ile	Cys
Thr	Ser	His	Asn 195	Lys	Asp	Phe	Leu	Asn	Ser	Leu	Ser	Gln	Pro	Gln	Ser
Val	Ile	Asp	Tyr	Phe	Lys	Gly	Lys	Thr	Arg	Phe	Glu	Ile	Thr	Leu	Asn
Thr 225	Val	Lys	Lys	Ile	Met	Asn	Tyr	Leu	Asn	Leu	Thr	Asp	Thr	Lys	Ile
Phe	Ser	Val	Leu	Asn	Ser	Asp	Thr	Asn	Pro	Ile	Leu	Thr	Gln	Phe	Asp
Lys	Val	Phe	Gly	Asn	Ser	Thr	Ala	Asn	Met	Pro	Asn	Thr	Thr	Phe	Asp
Asp	Tyr	Glu	Asn	Trp	Ala	Met	Lys	Ile	Ile	Leu	Glu	Arg	Tyr	Asn	Gly

Asp Leu Lys Leu Leu Glu Gln Asp Ile Arg Ser Lys Phe Asn Ser Arg
 290 295 300
 Ser Gly Ala Ser Lys Arg Met Lys Lys Phe Glu Thr Val Tyr His Ala
 305 310 315 320
 Met Thr Ser Ala Ser Thr Ser Glu Asn Pro Ile Glu Lys Ile Arg Asn
 325 330 335
 Leu Leu Leu

<210> 6481
 <211> 87
 <212> PRT
 <213> B.fragilis

<400> 6481
 Met Met Ser Val Leu Leu Leu Pro Leu Arg Trp Arg Leu Leu Ser Ala
 1 5 10 15
 Lys Ser Met Pro Pro Thr Lys Phe Phe His Leu Tyr Ile Leu Leu Leu
 20 25 30
 Phe Arg Glu Gly Val Val Ala Leu Arg Phe Ala Thr Phe Ala Val Pro
 35 40 45
 Phe Ala Gly Gly Pro Asn Ala Gly Phe Leu His Tyr Pro Lys Ala Val
 50 55 60
 Gln Ser Gln Pro Ile Tyr Trp Pro Ile Ser Thr Val Tyr Arg Ile Ile
 65 70 75 80
 Tyr Leu Ser Cys Pro Val Lys
 85

<210> 6482
 <211> 206
 <212> PRT
 <213> B.fragilis

<400> 6482
 Glu Arg Ser Leu Val Phe Ala Arg Ile Leu Ile Thr Phe Val Arg Asn
 1 5 10 15
 His Tyr Gln Leu Ser Asn Gly Lys Lys Asp Glu Val Trp Gln Val Val
 20 25 30
 Ser Ser Lys Tyr Leu Phe Arg Arg Pro Trp Leu Thr Val Arg Cys Asp
 35 40 45
 Asp Met Leu Leu Pro Asn Gly Asn His Ile Pro Glu Tyr Tyr Ile Leu
 50 55 60
 Glu Tyr Pro Asp Trp Val Asn Thr Ile Ala Ile Thr Lys Glu Gly Lys
 65 70 75 80
 Phe Val Phe Val Arg Gln Phe Arg Pro Gly Ile Gly Lys Gln Leu Tyr
 85 90 95
 Glu Leu Cys Ala Gly Val Cys Glu Lys Glu Asp Ala Ser Pro Leu Val
 100 105 110
 Ser Ala Gln Arg Glu Leu Leu Glu Glu Thr Gly Tyr Gly Lys Gly Asn
 115 120 125
 Trp Lys Glu Tyr Met Val Ile Ser Ala Asn Pro Ser Thr His Thr Asn
 130 135 140
 Leu Thr His Cys Phe Leu Ala Thr Asp Val Glu Gln Ile Asp Thr Gln
 145 150 155 160
 His Leu Glu Asp Thr Glu Ala Leu Thr Val His Leu Leu Ser Leu Glu
 165 170 175
 Glu Val Lys Glu Leu Leu Glu Asn Gly Gln Ile Met Gln Ser Leu His
 180 185 190
 Ala Ala Pro Leu Trp Lys Tyr Met Ala Glu His Lys Gln Ile

195

200

205

<210> 6483
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 6483
 Arg Val Ile Ser Ser Tyr Glu Val Ile Ser Ser Lys Arg Val Ser Thr
 1 5 10 15
 Val Ile Gly Asp Phe Phe Cys Pro Asn Glu Pro Met His Arg Val Glu
 20 25 30
 Lys Ser Lys Val Met Leu Asn Leu Ile Ile Pro Val Val Asn Trp Gly
 35 40 45
 Phe Gly Asn Asp Ser Lys Gly Cys Phe Asp Phe Val Phe Met Pro
 50 55 60

<210> 6484
 <211> 197
 <212> PRT
 <213> B.fragilis

<400> 6484
 Ile Met Glu Leu Gln Val Ile Gln Asn Lys Ile Tyr Glu Val Arg Gly
 1 5 10 15
 Gln Lys Val Met Leu Asp Phe Asp Leu Ala Glu Leu Tyr Gly Ser Glu
 20 25 30
 Thr Lys Arg Leu Lys Glu Ala Val Arg Arg Asn Leu Lys Arg Phe Pro
 35 40 45
 Ser Asp Phe Met Phe Glu Leu Thr Lys Glu Glu Phe Glu Ser Leu Arg
 50 55 60
 Ser Gln Ile Ala Ser Ser Asn Lys Arg Gly Gly Thr Arg Tyr Met Pro
 65 70 75 80
 Phe Ala Phe Thr Glu Gln Gly Val Ala Met Leu Ser Ser Val Leu Asn
 85 90 95
 Ser Glu Ser Ala Ile Glu Ile Asn Ile Ser Ile Met Arg Ala Phe Val
 100 105 110
 Thr Val Arg Gln Tyr Leu Ser Ser Leu Asn Ser Thr Thr Lys Glu Ile
 115 120 125
 Glu Glu Leu Lys Gln Arg Met Lys Met Leu Glu Glu Gly Asn Glu Asp
 130 135 140
 Ile Ile Ala Ala Val Asn Asp Leu Ser Glu Asp Thr Arg Lys Glu Leu
 145 150 155 160
 Asp Asp Ile Tyr Leu Ala Leu Ser Gln Leu Ala Glu Lys Gln Lys His
 165 170 175
 Val Asn Lys Gln Thr Glu Arg Arg Pro Ile Gly Phe Ala His Tyr Lys
 180 185 190
 Glu Asn Asn Lys Lys
 195

<210> 6485
 <211> 812
 <212> PRT
 <213> B.fragilis

<400> 6485
 Leu Ser Pro Ser Pro Asn Lys Glu Thr Pro Thr Met Lys Glu Asp Leu
 1 5 10 15
 Tyr Asp Asp Leu Tyr Glu Glu Lys Glu Glu Lys Ile Asp Phe His Ala

	20		25		30	
Leu	Leu	Phe	Arg	Tyr	Val	Ile
	35		40		45	
Ile	Ile	Cys	Leu	Ala	Gly	Ala
	50		55		60	
Val	Tyr	Asn	Ile	Ser	Ala	Ser
65			70		75	
Gly	Asn	Ser	Gly	Gly	Asn	Leu
			85		90	
Asn	Ser	Val	Ser	Asn	Ile	Asp
			100		105	
Thr	Leu	Val	Lys	His	Val	Val
	115		120		125	
Ser	Val	Lys	Gly	Ser	Phe	Asn
	130		135		140	
Val	Leu	Val	Gly	Leu	Thr	Pro
145			150		155	
Ala	Val	Phe	Glu	Leu	Thr	Leu
			165		170	
Ala	Thr	Val	Gly	Glu	Thr	Ser
	180		185		190	
Gly	Leu	Leu	Val	Thr	Pro	Ala
	195		200		205	
Asp	Ser	Ala	Gly	Val	Ser	Glu
	210		215		220	
Asn	Pro	Met	Gln	Thr	Ala	Lys
225			230		235	
Pro	Thr	Ser	Lys	Thr	Thr	Ser
			245		250	
Asn	Lys	Arg	Arg	Gly	Glu	Asp
			260		265	
Asn	Arg	Asn	Thr	Asn	Asn	Asp
	275		280		285	
Glu	Phe	Ile	Ala	Gly	Arg	Ile
	290		295		300	
Thr	Glu	Lys	Glu	Leu	Glu	Thr
305			310		315	
Leu	Ala	Ser	Asp	Ala	Gln	Leu
			325		330	
Lys	Gln	Arg	Val	Glu	Asn	Gly
			340		345	
Ala	Glu	Tyr	Ile	Ser	Ala	Pro
	355		360		365	
Asn	Val	Gly	Leu	Thr	Asp	Gln
	370		375		380	
Asn	Glu	Met	Val	Leu	Gln	Arg
385			390		395	
Ser	Asn	Pro	Val	Ile	Val	Asn
			405		410	
Glu	Asn	Ile	Leu	Thr	Thr	Ile
			420		425	
Thr	Lys	Ala	Asp	Leu	Asp	Arg
	435		440		445	
Ser	Asn	Ala	Pro	Ala	Gln	Glu
	450		455		460	
Gln	Glu	Ile	Lys	Ala	Gly	Leu
465			470		475	
Glu	Asn	Ser	Ile	Ala	Leu	Ala
			485		490	

Asp	Glu	Ala	Met	Ala	Asp	Asn	Gly	Pro	Val	Ser	Pro	Lys	Thr	Lys	Thr
			500					505					510		
Ile	Tyr	Met	Ile	Ala	Leu	Val	Met	Gly	Met	Gly	Ile	Pro	Val	Ala	Ile
		515					520					525			
Ile	Tyr	Val	Met	Gly	Leu	Leu	Gln	Phe	Arg	Ile	Glu	Gly	Arg	Ala	Asp
		530				535					540				
Val	Glu	Lys	Leu	Thr	Ser	Ala	Pro	Ile	Ile	Gly	Asp	Ile	Pro	Leu	Ala
545					550					555					560
Glu	Glu	Gly	Asn	Gly	Lys	Ala	Gly	Gly	Ile	Ala	Val	Arg	Glu	Asn	Glu
			565						570					575	
Asn	Ser	Leu	Met	Ala	Glu	Thr	Phe	Arg	Gly	Ile	Arg	Thr	Asn	Leu	Gln
			580					585					590		
Phe	Met	Leu	Gly	Glu	Glu	Asn	Lys	Val	Ile	Leu	Val	Thr	Ser	Thr	Ile
		595					600					605			
Ser	Gly	Glu	Gly	Lys	Thr	Phe	Val	Ala	Thr	Asn	Leu	Ala	Ile	Ser	Leu
		610				615					620				
Ser	Leu	Leu	Gly	Lys	Arg	Val	Val	Ile	Val	Gly	Leu	Asp	Ile	Arg	Lys
625					630					635					640
Pro	Gly	Leu	Asn	Lys	Val	Phe	Asn	Leu	Ser	Gln	Lys	Glu	Lys	Gly	Ile
			645						650					655	
Thr	Gln	Phe	Leu	Ala	Gly	Pro	Gln	Thr	Thr	Asp	Leu	Met	Ser	Met	Val
			660					665					670		
Gln	Pro	Ser	Gly	Ile	Ser	Arg	Thr	Leu	Ser	Ile	Leu	Pro	Gly	Gly	Thr
		675					680					685			
Val	Pro	Pro	Asn	Pro	Thr	Glu	Leu	Leu	Ala	Arg	Gln	Ala	Leu	Val	Glu
		690				695					700				
Ala	Ile	Asp	Ile	Leu	Lys	Lys	His	Phe	Asp	Tyr	Ile	Val	Leu	Asp	Thr
705					710					715					720
Ala	Pro	Ile	Gly	Met	Val	Thr	Asp	Thr	Gln	Ile	Ile	Ala	Arg	Val	Ala
			725						730					735	
Asp	Leu	Ser	Val	Tyr	Val	Cys	Arg	Ala	Asp	Tyr	Thr	His	Lys	Ala	Asp
			740					745					750		
Tyr	Thr	Leu	Leu	Glu	Asp	Leu	Arg	Leu	Gly	Asn	Lys	Leu	Pro	Asn	Leu
		755				760						765			
Cys	Thr	Val	Ile	Asn	Gly	Leu	Asp	Met	Lys	Lys	Arg	Lys	Tyr	Gly	Tyr
		770				775					780				
Tyr	Tyr	Gly	Tyr	Gly	Lys	Tyr	Gly	Arg	Tyr	Tyr	Gly	Tyr	Gly	Lys	Lys
785					790					795					800
Tyr	Gly	Tyr	Gly	Tyr	Gly	Tyr	Gly	Gln	Lys	His	Asn				
			805						810						

<210> 6486

<211> 101

<212> PRT

<213> B.fragilis

<400> 6486

Asp	Tyr	Val	Ser	Leu	Cys	Gly	Glu	Leu	His	Glu	Glu	Val	His	Thr	Cys
1				5					10					15	
Tyr	Asn	Gly	Gly	Tyr	Arg	Arg	Gln	Leu	Ala	Gly	Asp	Arg	Met	Leu	Ile
		20					25					30			
Pro	Lys	Ala	Ser	Leu	Ser	Ser	Asp	Arg	Ser	Leu	Gln	Pro	Asp	Phe	Val
		35					40					45			
Lys	Leu	Asp	Ser	Leu	Val	Ile	Ala	His	Gln	Pro	Arg	Arg	Gly	Gly	Ile
		50				55					60				
Arg	Ser	Arg	Ala	Leu	Tyr	Thr	Pro	Pro	Val	Lys	Pro	Trp	Glu	Pro	Gly
65					70					75					80
Val	Pro	Glu	Val	Arg	Asn	Arg	Lys	Asp	Arg	Pro	Arg	Val	Lys	Leu	Val
				85					90					95	

[illegible]

<400> 6487

Leu 1	Arg	Ala	Phe	Ile 5	Ile	Met	Thr	Asp	Met 10	Thr	Asp	Ile	Lys	Asn 15	Glu
Glu	Ala	Gly	Glu	Lys 20	Lys	Ser	Leu	Asn 25	Phe	Ile	Glu	Gln	Ala 30	Val	Glu
Asn	Asp	Leu	Lys	Ala 35	Gly	Lys	Asn 40	Gly	Gly	Lys	Val	Gln 45	Thr	Arg	Phe
Pro	Pro 50	Glu	Pro	Asn	Gly	Tyr 55	Leu	His	Ile	Gly	His 60	Ala	Lys	Ala	Ile
Cys 65	Leu	Asp	Phe	Gly 70	Ile	Ala	Ala	Ala	His	Gly 75	Gly	Val	Cys	Asn	Leu 80
Arg	Phe	Asp	Asp	Thr 85	Asn	Pro	Thr	Lys	Glu 90	Asp	Met	Glu	Tyr	Val 95	Glu
Ala	Ile	Gln	Glu	Asp 100	Ile	Arg	Trp	Leu 105	Gly	Phe	Gln	Trp	Gly 110	Asn	Val
Tyr	Tyr	Ala	Ser	Asp 115	Tyr	Phe	Gln	Gln 120	Leu	Trp	Asp	Phe	Ala 125	Val	Thr
Leu	Ile 130	Lys	Glu	Gly	Lys	Ala 135	Tyr	Val	Asp	Glu	Gln	Thr	Ser	Glu	Gln
Ile 145	Ala	Gln	Gln	Lys 150	Gly	Thr	Pro	Thr	Gln	Pro 155	Gly	Val	Glu	Ser	Pro 160
Tyr	Arg	Asn	Arg	Pro 165	Ile	Glu	Glu	Ser	Leu 170	Ala	Leu	Phe	Glu	Lys 175	Met
Asn	Ser	Asp	Glu	Ala 180	Lys	Glu	Gly	Ser 185	Met	Val	Leu	Arg	Ala 190	Lys	Ile
Asp	Met	Ala	Ser	Pro 195	Asn	Met	His 200	Phe	Arg	Asp	Pro	Ile 205	Met	Tyr	Arg
Ile	Leu 210	His	Val	Ala	His	His 215	Arg	Thr	Gly	Thr	Gln 220	Trp	Lys	Ala	Tyr
Pro 225	Met	Tyr	Asp	Phe 230	Ala	His	Gly	Gln	Ser	Asp 235	Tyr	Phe	Glu	Gly	Val 240
Thr	His	Ser	Leu	Cys 245	Thr	Leu	Glu	Phe	Val 250	Pro	His	Arg	Pro	Leu 255	Tyr
Asp	Leu	Phe	Ile	Asp 260	Trp	Leu	Lys	Glu 265	Gly	Lys	Asp	Leu	Asp 270	Asp	Asn
Arg	Pro	Arg	Gln	Thr 275	Glu	Phe	Asn 280	Lys	Leu	Asn	Leu	Asn 285	Tyr	Thr	Leu
Met	Ser 290	Lys	Arg	Asn	Leu	Leu 295	Ile	Leu	Val	Lys	Glu 300	Gly	Leu	Val	Asn
Asp 305	Trp	Asp	Asp	Pro 310	Arg	Met	Pro	Thr	Leu	Cys 315	Gly	Phe	Arg	Arg	Arg 320
Gly	Tyr	Ser	Pro	Glu 325	Ser	Ile	Arg	Lys	Phe 330	Ile	Asp	Lys	Ile	Gly 335	Tyr
Thr	Thr	Tyr	Asp 340	Ala	Leu	Asn	Asp	Phe 345	Ala	Leu	Leu	Glu	Ser 350	Ala	Val
Arg	Glu	Asp	Leu	Asn 355	Ala	Arg	Ala 360	Thr	Arg	Val	Ser	Ala 365	Val	Leu	Asn
Pro	Val 370	Lys	Leu	Ile	Ile	Thr 375	Asn	Tyr	Pro	Glu	Gly 380	Gln	Val	Glu	Glu
Leu 385	Glu	Ala	Ile	Asn 390	Asn	Pro	Glu	Asp	Pro	Thr 395	Ala	Gly	Ser	His	Thr 400

Ile Glu Phe Ser Arg Glu Leu Trp Met Glu Arg Asp Asp Phe Met Glu
 405 410 415
 Asp Ala Pro Lys Lys Tyr Phe Arg Met Thr Pro Gly Gln Glu Val Arg
 420 425 430
 Leu Lys Asn Ala Tyr Ile Val Lys Cys Thr Gly Cys Lys Lys Asp Glu
 435 440 445
 Asn Gly Thr Val Thr Glu Val Tyr Cys Glu Tyr Asp Pro Asn Thr Arg
 450 455 460
 Ser Gly Met Pro Asp Ala Asn Arg Lys Val Lys Gly Thr Leu His Trp
 465 470 475 480
 Leu Ser Cys Asn His Cys Leu Pro Ala Glu Val Arg Leu Tyr Asp Arg
 485 490 495
 Leu Trp Lys Val Glu Asn Pro Arg Asp Glu Met Ala Ala Ile Arg Glu
 500 505 510
 Ala Lys Gly Cys Asp Ala Leu Glu Ala Met Lys Glu Met Ile Asn Pro
 515 520 525
 Asp Ser Leu Thr Val Leu Pro His Cys Tyr Ile Glu Lys Tyr Val Ala
 530 535 540
 Asp Met Pro Ala Leu Ser Tyr Leu Gln Phe Gln Arg Ile Gly Tyr Phe
 545 550 555 560
 Asn Ile Asp Lys Asp Ser Thr Pro Gly His Leu Val Phe Asn Arg Thr
 565 570 575
 Val Gly Leu Lys Asp Thr Trp Gly Lys Ile Asn Lys
 580 585

<210> 6488
 <211> 224
 <212> PRT
 <213> B.fragilis

<400> 6488

Ala Leu Gln Leu Phe Asp Glu Lys Ala Ile Tyr Val Thr Asn Leu Met
 1 5 10 15
 Phe Lys Lys Met Lys Lys Asp Phe Asn Leu Thr Lys Leu Phe Tyr Ser
 20 25 30
 Phe Ala Ile Ala Phe Ser Val Val Thr Leu Ser Ser Cys Asn Asn Asp
 35 40 45
 Asp Asn Ser Pro Leu Pro Pro Ser Thr Asn Asp Val Ala Gly Thr
 50 55 60
 Tyr Asn Gly Lys Val Leu Ile Thr Gln Val Thr Pro Ala Thr Val Lys
 65 70 75 80
 Glu Asn Ala Gly Glu Ala Pro Gln Gly Gln Asp Val Asn Ala Thr Val
 85 90 95
 Lys Asn Asp Thr Val Phe Phe Asp Lys Leu Pro Val Thr Glu Leu Ile
 100 105 110
 Thr Ser Ile Val Gly Asp Lys Asp Lys Ala Glu Ala Ile Val Lys Ala
 115 120 125
 Ile Gly Asp Val Lys Tyr Lys Val Gly Tyr Lys Pro Ala Leu Asn Thr
 130 135 140
 Glu Lys Asp Ser Ile Tyr Leu Ala Phe Asp Pro Lys Pro Leu Thr Leu
 145 150 155 160
 Gln Leu Pro Ala Ala Val Glu Gly Gln Glu Gly Gln Thr Val Thr Val
 165 170 175
 Thr Ile Ser Ser Pro Asp Lys Gly Ser Phe Ala Tyr Lys Lys Asn Gln
 180 185 190
 Leu Lys Leu Lys Leu Ser Ala Asp Lys Val Glu Leu Ala Gly Val Ala
 195 200 205
 Val Pro Val Pro Gln Thr Leu Phe Asn Phe Asp Met Thr Lys Lys Lys
 210 215 220

<210> 6489
 <211> 172
 <212> PRT
 <213> B.fragilis

<400> 6489
 Asn Leu Glu Leu Ser Ile Met Ala Thr Thr Asn Phe Lys Gly Gln Pro
 1 5 10 15
 Val Lys Leu Ile Gly Glu Phe Ile Gln Val Gly Lys Val Ala Pro Asp
 20 25 30
 Phe Glu Leu Val Lys Ser Asp Leu Ser Ser Phe Ala Leu Lys Asp Leu
 35 40 45
 Lys Gly Lys Asn Ile Val Leu Asn Ile Phe Pro Ser Leu Asp Thr Gly
 50 55 60
 Val Cys Ala Thr Ser Val Arg Lys Phe Asn Lys Met Ala Ala Gly Met
 65 70 75 80
 Lys Asp Thr Val Val Leu Ala Ile Ser Lys Asp Leu Pro Phe Ala Gln
 85 90 95
 Gly Arg Phe Cys Thr Thr Glu Gly Ile Glu Asn Val Ile Pro Leu Ser
 100 105 110
 Asp Phe Arg Phe Ser Asp Phe Asp Glu Ser Tyr Gly Val Arg Met Ala
 115 120 125
 Asp Gly Pro Leu Ala Gly Leu Leu Ala Arg Ala Val Val Ile Gly
 130 135 140
 Lys Asp Gly Lys Val Ala Tyr Thr Glu Leu Val Pro Glu Ile Thr Gln
 145 150 155 160
 Glu Pro Asp Tyr Glu Lys Ala Leu Ala Ala Val Lys
 165 170

<210> 6490
 <211> 379
 <212> PRT
 <213> B.fragilis

<400> 6490
 Met Ile Asn Thr Pro Arg Lys Asn Gly Tyr Ser Phe Lys Tyr Gly Thr
 1 5 10 15
 Leu Phe Tyr Val Pro Phe Phe Ser Cys His Leu Gly Ile Ser Glu Thr
 20 25 30
 Phe Ile Arg Leu Tyr Ile Tyr Ala Ile Asp Phe Leu Leu Ile Ser Ser
 35 40 45
 Ile Phe Ser Asn Leu Ser Leu Lys Ile Phe Phe Ile Ile Asn Arg Val
 50 55 60
 Leu Glu His Thr Lys Lys Asn Lys Lys Met Glu Ile Glu Lys Phe Ile
 65 70 75 80
 Lys Ser Leu Ala Arg Lys Ala Lys Leu Gly Gly Arg Tyr Ser Thr Ala
 85 90 95
 Asn Thr Tyr Leu Tyr Thr Leu His Ser Phe Gln Lys Phe Ala Gly Lys
 100 105 110
 Ala Ser Leu Thr Phe Glu Glu Ile Thr Pro Glu Ser Ile Lys Glu Tyr
 115 120 125
 Glu Gln Tyr Leu Ile Leu Asn Gly Lys Arg Tyr Asn Thr Ile Ser Leu
 130 135 140
 Tyr Met Arg Met Leu Arg Ser Ile Cys Asn Gln Ala Ser Glu Gln Asn
 145 150 155 160
 Ile Ala Ser Leu Asn Thr Arg Glu Leu Phe Glu Asn Val Phe Ile Gly
 165 170 175
 Asn Glu Pro Thr Ala Lys Arg Ala Ile Ser Pro Val Leu Ile Ser Arg

180	185	190
Leu Leu Glu Ala Asp Phe Ser	Lys Asn Ser Arg Leu Asp Phe Ala Arg	
195	200	205
Asp Leu Phe Leu Leu Ser Phe	Tyr Leu Arg Gly Ile Pro Phe Val Asp	
210	215	220
Leu Val His Leu Arg Lys Thr	Asp Val Gln Gly Asn Met Leu Val Tyr	
225	230	235
Phe Arg Gln Lys Thr Gly Gln Gln Leu Thr	Val Ile Ile Glu Asn Cys	240
245	250	255
Ala Lys Val Ile Leu Arg Lys Tyr	Ala Ser Leu Cys Lys Glu Ser Val	
260	265	270
Tyr Leu Leu Pro Val Ile Ser	Ala Ala Gly Glu Glu Gly His Lys Gln	
275	280	285
Tyr Arg Ser Ala Leu Arg Val	Tyr Asn Lys Arg Leu Asn Gln Ile Ser	
290	295	300
Gly Ile Leu Lys Leu Lys Thr	Pro Leu Thr Ser Tyr Val Ala Arg His	
305	310	315
Ser Trp Ala Thr Thr Ala Leu Gln Lys	Gly Val Pro Val Ser Val Ile	
325	330	335
Ser Ala Gly Met Gly His Ala Ser	Glu Lys Val Thr Tyr Ile Tyr Leu	
340	345	350
Ala Ser Phe Asp Asn Lys Thr	Leu Ser Asn Ala Asn Lys Lys Val Ile	
355	360	365
Ala Ala Val Arg Phe Lys Lys	Glu Glu Glu Glu	
370	375	

<210> 6491
 <211> 155
 <212> PRT
 <213> B.fragilis

<400> 6491
Lys Glu Ser Thr Ile Met Ser Lys Glu Val Thr Tyr Ser Val Val Ala
1 5 10 15
Arg Lys Asn Met Leu Lys Lys Asp Asp Pro Ala Lys Tyr Tyr Ala Gln
20 25 30
Ala Gln Ala Ser Gly Asp Val Gly Leu Asp Glu Ile Ser Thr Arg Val
35 40 45
Glu Lys Ala Cys Thr Val His Ser Ala Asp Val Val Ala Val Leu Lys
50 55 60
Ala Leu Glu Asp Glu Met Val Asp Gly Leu Ser Arg Gly Glu Ile Val
65 70 75 80
Arg Leu Gly Asn Ile Gly Thr Phe Gln Val Gly Leu Arg Ser Arg Gly
85 90 95
Ala Glu Lys Ala Glu Asp Phe Lys Ala Ala Asn Ile Ser Lys Ala Arg
100 105 110
Val Asn Phe Arg Pro Gly Pro Val Leu Ala Asp Ala Met Lys Thr Leu
115 120 125
Asn Phe Ser Lys Val Ser Thr Arg Ala Ala Gln Lys Gly Asp Gly Gly
130 135 140
Gly Asp Gly Asp Ile Val Asp Asp Pro Thr Ala
145 150 155

<210> 6492
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 6492

Lys His Thr Ala Phe Arg Ile Phe Phe Arg Thr Phe Thr Val Cys Asn
 1 5 10 15
 Asn Gln Ile Ile Lys Ala Met Asn Gln Arg Lys Glu Glu Asp Thr Thr
 20 25 30
 Glu Ala Asp Phe Ile Ile Arg Ser Tyr Thr Lys Ala Glu Leu Ala Gln
 35 40 45
 Leu Tyr Cys Pro Gly Leu Asp Pro Val Leu Ala Leu Gln Lys Leu Tyr
 50 55 60
 Arg Trp Met Arg Lys Asn Thr Ala Leu Thr Gln Ala Leu Ser Glu Val
 65 70 75 80
 Asn Tyr Asn Lys Tyr Arg His Ser Phe Leu Lys Arg Glu Val Arg Leu
 85 90 95
 Ile Val Tyr Tyr Leu Gly Glu Pro
 100

<210> 6493
 <211> 212
 <212> PRT
 <213> B.fragilis

<400> 6493
 Thr Ile Gly Ala Arg Thr Leu Phe Thr Met Asp Asn Asn Leu Lys Asn
 1 5 10 15
 Lys Ile Asp Met Lys Thr Leu Phe Asp Glu Met Glu His Ala Val Lys
 20 25 30
 Asn Trp Trp Leu Ser Leu Ile Leu Gly Ile Leu Tyr Ile Ile Val Ala
 35 40 45
 Leu Cys Leu Leu Phe Ala Pro Gly Ser Ser Tyr Ile Ala Leu Ser Val
 50 55 60
 Ile Phe Ser Ile Ser Met Leu Ile Ser Gly Ile Ile Glu Ile Ile Phe
 65 70 75 80
 Ser Ile Ser Asn Arg Arg Gly Ile Ser Ser Trp Gly Trp Tyr Leu Ala
 85 90 95
 Gly Gly Ile Ile Asp Leu Ile Leu Gly Ile Tyr Leu Val Ala Tyr Pro
 100 105 110
 Leu Leu Ser Met Glu Val Ile Pro Phe Ile Val Ala Phe Trp Met Met
 115 120 125
 Phe Arg Gly Phe Ser Ala Thr Gly Tyr Ser Met Asp Leu Lys Arg Tyr
 130 135 140
 Gly Thr Arg Glu Trp Gly Trp Tyr Met Gly Phe Gly Ile Leu Ala Ile
 145 150 155 160
 Ile Cys Ser Leu Ile Ile Leu Trp Gln Pro Ala Val Gly Ala Leu Tyr
 165 170 175
 Val Ile Tyr Met Leu Ala Phe Thr Phe Leu Ile Ile Gly Phe Phe Arg
 180 185 190
 Val Met Leu Ser Phe Glu Leu Lys Ser Leu His Lys Arg Ser Thr Val
 195 200 205
 Met Asn Gly Lys
 210

<210> 6494
 <211> 482
 <212> PRT
 <213> B.fragilis

<400> 6494
 Leu Leu Ile Lys Leu Gly Arg Lys Asn Ser Pro Ser Glu Arg Glu Arg
 1 5 10 15
 Glu Leu Gln Asn Leu Ile Ala Gln Tyr Glu Ala Val Lys Ala Lys Asn

	20		25		30	
Glu	Ser	Leu	Tyr	Leu	Asp	Gly
	35		40		45	
Tyr	Ala	Ser	Glu	Arg	Lys	Phe
	50		55		60	
Gly	Leu	Gly	Leu	His	Pro	Gly
65			70		75	
Tyr	Leu	Phe	Leu	Asp	Leu	Asn
	85		90		95	
Glu	Leu	Ile	Thr	Asp	Thr	Tyr
	100		105		110	
Glu	Leu	Leu	Leu	Asn	Glu	Gly
	115		120		125	
Asp	Ser	Ile	Glu	Glu	Glu	Lys
	130		135		140	
Ile	Val	Tyr	Leu	Tyr	Thr	Asp
145			150		155	
Trp	Leu	Lys	Arg	Gly	Ala	Glu
	165		170		175	
Ala	Ala	Thr	Ala	Asp	Cys	Tyr
	180		185		190	
Gln	Ala	Ile	Val	Val	Phe	Asn
	195		200		205	
Pro	Ala	Tyr	Trp	Val	Gly	Leu
	210		215		220	
Phe	Asp	Lys	Ala	Ile	Glu	Ser
225			230		235	
Glu	Phe	Gly	Glu	Ala	His	Ile
	245		250		255	
Glu	Asn	Ile	Glu	Gly	Ala	Ile
	260		265		270	
Lys	Thr	Leu	Ser	Pro	Glu	Phe
	275		280		285	
Thr	Gln	Gln	Glu	Asn	Trp	Ala
	290		295		300	
Leu	Arg	Ala	Ile	Glu	Glu	Asn
305			310		315	
Asp	Ile	Tyr	Ser	Asn	Lys	Ala
	325		330		335	
Glu	Glu	Ala	His	Arg	Leu	Cys
	340		345		350	
Asp	Ala	Glu	Pro	Tyr	Leu	Leu
	355		360		365	
Asn	Phe	Asp	Leu	Ala	Arg	Ala
	370		375		380	
Pro	Glu	Ala	Asp	Thr	Trp	Met
385			390		395	
Arg	Met	Leu	Glu	Asn	Ala	Arg
	405		410		415	
Asp	Pro	Glu	Tyr	Pro	Lys	Ile
	420		425		430	
Val	Leu	Gln	Asp	His	Glu	Gly
	435		440		445	
Asp	Ser	Ile	Asn	Leu	Asp	Ser
	450		455		460	
Val	Asp	Gly	Glu	Gln	Met	Leu
465			470		475	
Glu	Lys					

<210> 6495
 <211> 254
 <212> PRT
 <213> B.fragilis

<400> 6495

His Arg Cys Lys Leu Lys Met Ser Leu Met Lys Arg Ser Pro Thr Gly
 1 5 10 15
 Lys Ser Trp Gly Val Lys Ile Ser Arg Ser Gly Val Phe Arg Leu Glu
 20 25 30
 Asp Ile Thr His Tyr Tyr Ser Glu Glu Glu Leu Gly Glu Ala Tyr Glu
 35 40 45
 Asn Ala Gly Glu Lys Ile Met Glu Leu Ile Gln Lys Thr Pro Gly Ile
 50 55 60
 Val Ala Phe Ile Pro Gln Lys Phe Val Val Arg Pro Asp Ala Val His
 65 70 75 80
 Phe Ile Lys Asp Asn Thr Ile Ser Val Lys Glu Val Phe Ala Gly Ala
 85 90 95
 Glu Trp Phe Pro Thr Ala Thr Pro Ala Pro Leu Phe Gly Phe Leu Pro
 100 105 110
 Leu Ile Thr Gly Thr Leu Trp Val Ser Leu Phe Ala Ile Leu Ile Ala
 115 120 125
 Leu Pro Phe Gly Leu Ser Val Ser Ile Tyr Met Ser Glu Val Ala Asp
 130 135 140
 Ser Lys Val Arg Ser Trp Leu Lys Pro Val Ile Glu Leu Leu Ser Gly
 145 150 155 160
 Ile Pro Ser Val Val Tyr Gly Phe Phe Gly Leu Ile Val Ile Val Pro
 165 170 175
 Leu Ile Gln Lys Val Phe Asp Leu Pro Val Gly Glu Ser Gly Leu Ala
 180 185 190
 Gly Ser Ile Val Leu Ala Ile Met Ala Leu Pro Thr Ile Ile Thr Val
 195 200 205
 Thr Glu Asp Ala Met Arg Asn Cys Pro Arg Ala Met Arg Glu Ala Ser
 210 215 220
 Leu Ala Leu Gly Ala Ser Gln Trp Gln Thr Ile Tyr Lys Val Val Ile
 225 230 235 240
 Arg Leu His His Gly Ala Gly Arg Ile Arg Arg Leu Asp Leu
 245 250

<210> 6496
 <211> 424
 <212> PRT
 <213> B.fragilis

<400> 6496

Asn His Arg Asp Ala Phe Leu Ile Met Leu Leu Ser Val Ala Val Ala
 1 5 10 15
 Ile Thr Val Leu Leu Ser Val Ser Val Ile Ala Ala Val Phe Ser Val
 20 25 30
 Ser Ile Val Ile Ala Val Phe Pro Leu Phe His Val Gln Ala Val Asp
 35 40 45
 Tyr Gly Thr Gln Val Gly Glu Leu Val Ala Gln Ala Glu Ile Phe Glu
 50 55 60
 Gln Gly Ile Val Gly Phe Val Gly Ile Val Gly Ala Ala Asp Ile Asn
 65 70 75 80
 Arg Glu Val Gly His Pro Cys Asp Asp Leu Cys Val Gly His His Ser
 85 90 95
 Asp Gly Ser Gly Val Glu His Asp Ile Val Glu Val Leu Phe Glu Asp

100 105 110
 Ile Asp Gly Phe His Gln Cys Leu Ala Cys Gln Gln Phe Gly Arg Val
 115 120 125
 Gly Arg Tyr Gly Ser Ala Gly Glu Asp Ala Gln Gly Ala Gly Tyr Pro
 130 135 140
 Gly Gly Leu His His Arg His Gln Val Gly Gly Leu Arg Ala Gly Gln
 145 150 155 160
 Glu Leu Gly Asp Ser Phe Phe Phe Leu Arg Glu Val Glu Asp Leu Val
 165 170 175
 Glu Ser Arg Leu Ala Asp Val Glu Pro Tyr Asp Asp Tyr Ser Phe Ala
 180 185 190
 Gln Gln Arg Glu Ala Asp Gly Glu Val Gly Gly Tyr Lys Cys Phe Ser
 195 200 205
 Phe Ala Ala Asp Gly Arg Gly Asp Gln Asp Asp Phe Ile Leu Phe Ala
 210 215 220
 Gln His Lys Leu Gln Val Gly Ala Asp Ala Pro Glu Gly Phe Arg His
 225 230 235 240
 Gln Ala Val Phe Val Phe Ala Asp Ser Asp Ala Ser Arg Phe Pro Val
 245 250 255
 Thr Leu Phe Gly Gln Gly Asp Val Ser Asp Asp Gly Gly Gly Gln
 260 265 270
 Leu Phe His Ile Gly Pro Ser Phe Tyr Pro Glu Leu Glu Gln Pro His
 275 280 285
 Asp Val Asp Asp Gly Tyr Gly Asp Ala His Pro His Asp Glu Gly Tyr
 290 295 300
 His Ile Asp Arg Phe Gly Leu Gly Arg Asn Gly Thr Val Val Arg His
 305 310 315 320
 Gly Leu Val Tyr Asp Leu Gly Val Val Gly Ser Gly Gly Gln Cys Asp
 325 330 335
 Gly Val Phe Phe Pro Phe Leu Gln Gln His Gln Val Glu Ser Gly Phe
 340 345 350
 Asp Leu Leu Leu Pro Gly Asp Ala Asp Glu Leu Ala Phe Leu Arg Gly
 355 360 365
 Arg Ile Ala Asp Ala Ala Val Glu Leu Val Gly Leu Thr Val Glu Val
 370 375 380
 Gly Leu Gly Asp Gln Gln Ser Phe Leu Asn Ala Val Asp Gly Gly Gln
 385 390 395 400
 Asp Val Phe Ala His Gly Thr Asp Ala Ala Ile Gln Val His Asp His
 405 410 415
 Arg Val Ala Phe Arg Gly Val Ala
 420

<210> 6497

<211> 62

<212> PRT

<213> B.fragilis

<400> 6497

Glu Met Arg Trp Lys Glu Lys Lys Lys Leu Ile Lys Ile Lys Lys Met
 1 5 10 15
 Asn Lys Arg Asn Tyr Thr Thr Glu Glu His Arg Val Ser Gln Arg Ile
 20 25 30
 Phe Phe Pro His His Thr Lys Asp Glu Asn Pro Val Lys Leu Cys Val
 35 40 45
 Leu Cys Gly Glu Pro Pro His Ser Asn Ile Leu Lys Leu Arg
 50 55 60

<210> 6498

<211> 153

<212> PRT
 <213> B.fragilis

<400> 6498

Arg	His	Pro	Cys	His	Ala	Arg	Lys	His	Pro	Asp	His	His	Pro	Gln	Arg
1				5					10					15	
Ser	Glu	Arg	Ile	Ala	Asp	His	Gln	Gly	Arg	Pro	Arg	Pro	Ser	Gly	Gln
			20					25					30		
Gln	Val	Gln	Pro	Pro	His	Gln	Gln	Cys	Ala	Arg	Ala	Gly	Thr	Pro	Val
		35					40					45			
Arg	Gln	His	Leu	Pro	Ala	Ala	Gly	Asp	Gln	Ser	Arg	Thr	Leu	Pro	Asp
	50					55					60				
Ala	Val	Ala	Glu	Thr	Gly	Arg	Lys	Leu	His	Arg	Thr	Gly	Arg	His	Cys
65					70					75					80
Gln	Gln	Arg	Gln	Asp	Arg	Arg	Arg	Gly	His	Gly	Gly	Gln	Arg	Ser	Arg
				85					90					95	
Phe	Ser	Gln	Asp	Gln	Asn	Asp	Leu	Tyr	Asp	Ser	Pro	Arg	His	Gly	Asp
			100					105					110		
Gly	His	Pro	Arg	Ser	His	His	Leu	Arg	His	Gly	Ala	Ala	Pro	Val	Pro
		115					120					125			
Asp	Arg	Arg	Thr	Gly	Arg	Cys	Gly	Lys	Ala	Asp	Leu	Arg	Pro	His	His
	130					135					140				
Arg	Arg	His	Pro	Pro	Gly	Arg	Arg	Gly							
145					150										

<210> 6499

<211> 262

<212> PRT

<213> B.fragilis

<400> 6499

Met	Thr	Lys	Arg	Leu	Leu	Phe	Phe	Thr	Leu	Thr	Cys	Ile	Leu	Leu	Ala
1				5					10					15	
Ser	Cys	Gln	Ser	Tyr	Lys	Lys	Val	Pro	Tyr	Leu	Gln	Asp	Pro	Gly	Glu
			20					25					30		
Ala	Gln	Arg	Ala	Val	Ala	Glu	Ala	Lys	Leu	Tyr	Asp	Ala	Arg	Ile	Leu
		35					40					45			
Pro	Lys	Asp	Leu	Leu	Thr	Ile	Val	Val	Ser	Cys	Ser	Asp	Pro	Glu	Leu
	50					55					60				
Ala	Glu	Pro	Phe	Asn	Leu	Thr	Val	Ser	Thr	Pro	Val	Ser	Asn	Thr	Gln
65					70					75					80
Lys	Ser	Leu	Thr	Ser	Gln	Pro	Ala	Leu	Gln	Gln	Tyr	Leu	Val	Asp	Asn
				85					90					95	
Arg	Gly	Asn	Ile	Asp	Phe	Pro	Val	Leu	Gly	Thr	Leu	His	Ile	Gly	Gly
			100					105					110		
Leu	Thr	Lys	Gly	Glu	Ala	Glu	Ser	Leu	Ile	Arg	Glu	Lys	Leu	Lys	Gly
		115					120					125			
Tyr	Ile	Lys	Glu	Asn	Thr	Ile	Val	Thr	Val	Arg	Met	Ala	Asn	Tyr	Lys
	130					135					140				
Ile	Ser	Val	Ile	Gly	Glu	Val	Asn	Arg	Pro	Gly	Thr	Phe	Thr	Ile	Ser
145					150					155					160
Asn	Glu	Lys	Val	Asn	Leu	Phe	Glu	Ala	Leu	Ala	Met	Ala	Gly	Asp	Met
			165					170						175	
Thr	Val	Tyr	Gly	Leu	Arg	Asp	Asn	Val	Arg	Leu	Ile	Arg	Glu	Asp	Ala
		180						185					190		
Asp	Gly	His	Gln	His	Ile	Ile	Thr	Leu	Asn	Met	Asn	Arg	Ala	Asp	Ile
		195					200					205			
Ile	Gln	Ser	Pro	Tyr	Tyr	Tyr	Leu	Gln	Gln	Asn	Asp	Ile	Leu	Tyr	Val
	210						215				220				

Thr Pro Asn Lys Thr Lys Ala Lys Thr Ala Asp Ile Ser Ala Ser Thr
 225 230 235 240
 Thr Ile Trp Phe Ser Val Val Gly Thr Leu Val Ser Leu Ala Ser Leu
 245 250 255
 Ile Ile Thr Ile Ala Lys
 260

<210> 6500

<211> 149

<212> PRT

<213> B.fragilis

<400> 6500

Lys Ser Lys Gly Met Lys Lys Val Phe Glu Arg Ile Ile Glu Gly Ile
 1 5 10 15
 Leu Thr Cys Ser Gly Phe Val Thr Ser Ile Thr Ile Leu Leu Ile Val
 20 25 30
 Leu Phe Leu Phe Thr Glu Ala Phe Gly Leu Phe Ser Ser Lys Val Ile
 35 40 45
 Glu Glu Gly Tyr Val Leu Ala Leu Asn Lys Asp Asn Lys Val Ser Glu
 50 55 60
 Leu Thr Pro Met Gln Ile Lys Asp Val Phe Asp Glu Glu Ile Thr Asn
 65 70 75 80
 Trp Lys Glu Leu Gly Gly Glu Asp Leu Pro Ile Arg Gly Val Pro Ser
 85 90 95
 Gly Arg His His Ala Leu Leu Leu Gly Arg Arg Thr Gly Arg Ser Leu
 100 105 110
 Arg Glu Cys Arg Gly Lys Asp Tyr Gly Ala Asp Ser Glu Asn Thr Arg
 115 120 125
 Tyr Arg Cys Phe Tyr Ser Ser Glu Val Cys Gly Thr Ala Gly Cys Gly
 130 135 140
 Thr Phe His Lys Gly
 145

<210> 6501

<211> 470

<212> PRT

<213> B.fragilis

<400> 6501

Lys Tyr Ser Met Lys Gln Val Leu Arg Phe Asn Lys Val Ile Lys Arg
 1 5 10 15
 Ile Val Phe Thr Gly Asp Leu Ile Leu Leu Asn Gly Thr Phe Leu Ser
 20 25 30
 Leu Tyr Thr Leu Leu Gly Ser Lys Phe Phe Ala Asp Pro Phe Ile His
 35 40 45
 Ser Leu Pro Gln Val Leu Val Leu Leu Asn Leu Cys Tyr Leu Val Ser
 50 55 60
 Asn Met Ser Ser Gly Ile Ile Leu His Arg Arg Val Val Arg Pro Glu
 65 70 75 80
 Gln Ile Val Trp Arg Ala Leu Arg Asn Ser Ala Gly His Ala Leu Phe
 85 90 95
 Phe Ser Cys Ala Leu Thr Phe Gly Asn Phe Gly Ile Leu Ser Ala Arg
 100 105 110
 Phe Phe Leu Phe Tyr Ile Ala Phe Thr Leu Leu Leu Val Cys Tyr
 115 120 125
 Arg Leu Leu Phe Arg Lys Ile Leu Lys Ser Tyr Arg Lys His Gly Gly
 130 135 140
 Asn Ser Arg Ser Ile Ile Leu Val Gly Ser Asn Ser Asn Ile Ile Glu

145 150 155 160
 Leu Tyr His Gln Met Thr Asp Asp Val Thr Ser Gly Phe Arg Val Ile
 165 170 175
 Gly Tyr Phe Asp Asp Gln Pro Gly Ser Arg Phe Pro Glu Lys Val Asn
 180 185 190
 Tyr Leu Gly Lys Pro Gly Lys Ile Val Asp Arg Leu Lys Gln Gly Gly
 195 200 205
 Val Glu Gln Val Tyr Cys Cys Leu Pro Ser Ala Arg Ser Glu Glu Ile
 210 215 220
 Leu Pro Ile Ile Asp Tyr Cys Glu Asn His Leu Ile Arg Phe Phe Ser
 225 230 235 240
 Val Pro Asn Val Arg Ser Tyr Leu Lys Arg Arg Met Tyr Phe Glu Leu
 245 250 255
 Leu Gly Asn Val Pro Val Leu Cys Ile Arg Gln Glu Pro Leu Ser Phe
 260 265 270
 Ala Glu Asn Arg Phe Arg Lys Arg Val Phe Asp Ile Ala Phe Ser Leu
 275 280 285
 Leu Phe Leu Cys Thr Leu Phe Pro Ile Ile Tyr Val Ile Val Gly Leu
 290 295 300
 Thr Ile Lys Ile Thr Ser Pro Gly Pro Ile Phe Phe Lys Gln Lys Arg
 305 310 315 320
 Ser Gly Glu Asp Gly Arg Glu Phe Trp Cys Tyr Lys Phe Arg Ser Met
 325 330 335
 Lys Val Asn Thr Gln Ser Asp Thr Leu Gln Ala Thr Leu His Asp Pro
 340 345 350
 Arg Lys Thr Arg Phe Gly Asn Phe Leu Arg Lys Ser Ser Ile Asp Glu
 355 360 365
 Leu Pro Gln Phe Ile Asn Val Leu Met Gly Asp Met Ser Val Val Gly
 370 375 380
 Pro Arg Pro His Met Leu Lys His Thr Glu Gln Tyr Ser Gln Leu Ile
 385 390 395 400
 Asn Lys Tyr Met Val Arg His Phe Val Lys Pro Gly Val Thr Gly Trp
 405 410 415
 Ala Gln Val Thr Gly Phe Arg Gly Glu Thr His Glu Leu Trp Gln Met
 420 425 430
 Glu Gly Arg Val Gln Arg Asp Ile Trp Tyr Ile Glu His Trp Thr Phe
 435 440 445
 Met Leu Asp Leu Tyr Ile Ile Tyr Lys Thr Val Arg Asn Ala Leu Glu
 450 455 460
 Gly Glu Lys Glu Ala Tyr
 465 470

<210> 6502

<211> 198

<212> PRT

<213> B.fragilis

<400> 6502

Ile Met Val Ile Ala Tyr Leu Arg Val Ser Thr Glu Lys Gln Phe Leu
 1 5 10 15
 Ala Asn Gln Lys Glu Glu Ile Met Arg Phe Ala Glu Lys Asn Gly Leu
 20 25 30
 Ser Ile Asp Lys Trp Tyr Thr Glu Thr Val Ser Gly Ser Val Ser Thr
 35 40 45
 Lys Asp Arg Lys Leu Ser Glu Leu Leu Lys Arg Met His Pro Gly Asp
 50 55 60
 Thr Leu Ile Val Thr Glu Ile Ser Arg Leu Ser Arg Thr Leu Leu Glu
 65 70 75 80
 Ile Met Thr Ile Leu Asn Phe Cys Ile Lys Lys Gln Val Val Leu Tyr

				85				90					95				
Ser	Thr	Lys	Glu	Gly	Tyr	Val	Phe	Gln	Asp	Asp	Ile	Asn	Ser	Lys	Val		
			100					105					110				
Leu	Gly	Phe	Ala	Phe	Gly	Leu	Met	Ala	Glu	Ile	Glu	Arg	Asn	Leu	Ile		
		115					120					125					
Ser	Met	Arg	Thr	Lys	Glu	Ala	Leu	Ala	Arg	Arg	Lys	Gln	Glu	Gly	Met		
	130						135					140					
Thr	Leu	Gly	Arg	Lys	Lys	Gly	Asp	Thr	Pro	Lys	Ile	Lys	Leu	Leu	Arg		
145					150					155					160		
Ala	Asn	Lys	Arg	Val	Leu	Thr	Lys	Glu	Leu	Asp	Lys	Gly	Thr	Thr	Tyr		
				165					170						175		
Ser	Glu	Leu	Ala	Glu	Lys	Met	Gly	Val	Ser	Arg	Thr	Thr	Leu	Phe	Arg		
			180					185					190				
Phe	Met	Lys	Thr	Met	Tyr												
		195															

<210> 6503

<211> 216

<212> PRT

<213> B.fragilis

<400> 6503

Ile	Lys	Gln	Met	Glu	Ser	Val	Ala	Phe	Ile	Gln	Trp	Cys	Leu	Asp	His		
1				5					10					15			
Leu	Asn	Tyr	Trp	Thr	Ile	Thr	Leu	Leu	Met	Thr	Ile	Glu	Ser	Ser	Phe		
			20					25					30				
Ile	Pro	Phe	Pro	Ser	Glu	Val	Val	Val	Pro	Pro	Ala	Ala	Tyr	Lys	Ala		
		35					40					45					
Ala	Val	Asn	Glu	Glu	Leu	Asn	Ile	Tyr	Leu	Val	Val	Leu	Phe	Ala	Thr		
	50					55					60						
Leu	Gly	Ala	Asn	Leu	Gly	Ala	Ile	Ile	Asn	Tyr	Tyr	Leu	Ala	Arg	Trp		
65					70				75					80			
Leu	Gly	Arg	Pro	Ile	Val	Tyr	Lys	Phe	Ala	Asn	Ser	Arg	Phe	Gly	His		
				85					90					95			
Met	Cys	Leu	Ile	Asp	Glu	Ala	Lys	Val	Gln	His	Ala	Glu	Glu	Tyr	Phe		
		100						105					110				
Asp	Lys	His	Gly	Ala	Leu	Ser	Thr	Phe	Ile	Gly	Arg	Leu	Ile	Pro	Ala		
		115					120					125					
Val	Arg	Gln	Leu	Ile	Ser	Ile	Pro	Ala	Gly	Leu	Ala	Arg	Met	Lys	Leu		
	130					135						140					
His	Thr	Phe	Leu	Ile	Tyr	Thr	Thr	Leu	Gly	Ala	Gly	Leu	Trp	Asn	Thr		
145					150					155					160		
Ile	Leu	Ala	Ala	Ile	Gly	Tyr	Tyr	Leu	Ser	Thr	Val	Pro	Gly	Ile	Glu		
				165					170					175			
Ser	Glu	Glu	Gln	Leu	Leu	Ala	Lys	Val	Thr	Glu	Tyr	Ser	His	Glu	Leu		
			180					185					190				
Gly	Tyr	Cys	Phe	Ile	Val	Ile	Gly	Val	Phe	Ile	Val	Gly	Phe	Leu	Val		
		195					200					205					
Tyr	Lys	Gly	Met	Lys	Lys	Lys	Lys										
		210					215										

<210> 6504

<211> 163

<212> PRT

<213> B.fragilis

<400> 6504

Cys	Phe	Ser	Val	Gly	Gly	Met	Ser	Lys	Asn	Glu	Gly	Gly	Ser	Met	Arg		
1				5					10					15			

Lys Ile Asp Leu Ile Val Ile His Cys Ser Ala Thr Arg Glu Asp Arg
 20 25 30
 Cys Phe Thr Glu Phe Asp Leu Asp Val Cys His Arg Arg Arg Gly Phe
 35 40 45
 Asn Gly Pro Gly Tyr His Phe Tyr Ile Arg Lys Asp Gly Arg Ile Val
 50 55 60
 Ser Thr Arg Pro Val Glu Lys Ile Gly Ala His Ala Lys Gly His Asn
 65 70 75 80
 Ala Thr Ser Ile Gly Ile Cys Tyr Glu Gly Leu Asp Ala Arg Gly
 85 90 95
 Arg Pro Lys Asp Thr Arg Thr Glu Trp Gln Val His Ser Met Arg Val
 100 105 110
 Leu Val Lys Thr Leu Leu Lys Gln Tyr Pro Gly Ser Arg Val Cys Gly
 115 120 125
 His Arg Asp Leu Ser Pro Asp Leu Asn Ala Asn Gly Glu Ile Glu Pro
 130 135 140
 Glu Glu Trp Ile Lys Gln Cys Pro Cys Phe Asn Val Ile Glu Asp Lys
 145 150 155 160
 Lys Leu His

<210> 6505
 <211> 285
 <212> PRT
 <213> B.fragilis

<400> 6505
 Asn Ser Gly Val Leu Cys Gly Glu Ser Asn Ser Lys Leu Asn His Met
 1 5 10 15
 Lys Ile Arg Thr Ile Leu Phe Gly Arg Leu Ser Leu Ala Ala Leu His
 20 25 30
 Ala Asn Ala Gln Arg Ile Lys Gly Ser Asp Thr Val Leu Pro Val Ala
 35 40 45
 Gln Gln Thr Ala Glu Arg Phe Met Asn Arg Glu Pro Asp Ala Arg Val
 50 55 60
 Thr Val Thr Gly Gly Gly Thr Gly Val Gly Ile Ser Ala Leu Met Asp
 65 70 75 80
 Asn Thr Thr Asp Ile Ala Met Ala Ser Arg Pro Ile Lys Phe Ser Glu
 85 90 95
 Lys Met Lys Ala Lys Ala Ala Lys Arg Asp Ile Asp Glu Val Ile Val
 100 105 110
 Ala Tyr Asp Ala Leu Ala Val Val Val His Pro Ser Asp Pro Val Lys
 115 120 125
 Lys Leu Thr Arg Arg Gln Leu Glu Asp Ile Phe Arg Gly Lys Ile Thr
 130 135 140
 Asn Trp Lys Gln Val Gly Gly Asp Asp Arg Lys Ile Val Val Tyr Ser
 145 150 155 160
 Arg Glu Thr Ser Ser Gly Thr Tyr Glu Phe Phe Lys Glu Ser Val Leu
 165 170 175
 Lys Asn Lys Asn Tyr Met Ser Ser Ser Leu Ser Met Pro Ala Thr Gly
 180 185 190
 Ala Ile Ile Gln Ser Val Ser Gln Thr Lys Gly Ala Ile Gly Tyr Val
 195 200 205
 Gly Leu Ala Tyr Val Ser Pro Arg Ile Lys Thr Leu Ser Ile Ser Tyr
 210 215 220
 Asp Gly Glu His Tyr Ala Thr Pro Thr Val Glu Asn Ala Thr Asn Lys
 225 230 235 240
 Thr Tyr Pro Ile Val Arg Pro Leu Tyr Tyr Tyr Tyr Asp Ala Lys Asn
 245 250 255

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Lys Thr Gln Ile Ala Pro Leu Leu Glu Phe Ile Leu Ser Pro Glu Gly
 260 265 270
 Gln Asp Ile Ile Lys Lys Ser Gly Tyr Ile Pro Val Lys
 275 280 285

<210> 6506
 <211> 147
 <212> PRT
 <213> B.fragilis

<400> 6506

Leu Met Met Phe Leu Ile Phe Lys Tyr Tyr Thr Ile Met Lys Thr Met
 1 5 10 15
 Ile Ile Ser Ile Ile Ala Val Leu Ala Ser Val Ala Val Ser Gly Gln
 20 25 30
 Ser Leu Thr Leu Thr Val Lys Asp Val Glu His Val Glu Gly Thr Leu
 35 40 45
 Tyr Val Ala Ile Tyr Ser Ser Lys Glu Asn Phe Met Lys Lys Pro Leu
 50 55 60
 Phe Gly Phe Arg Val Ala Val Lys Asp Arg Thr Met Thr Ile Pro Cys
 65 70 75 80
 Lys Gly Ile Pro Ala Gly Thr Tyr Ala Ile Ser Leu Phe Gln Asp Glu
 85 90 95
 Asn Gly Asn Gly Lys Leu Asp Thr Gly Ser Phe Gly Arg Pro Leu Glu
 100 105 110
 Lys Phe Gly Phe Ser Asn Asp Ala Glu Gly Ile Met Gly Ala Pro Ser
 115 120 125
 Tyr Glu Lys Cys Cys Phe Glu Phe Lys Arg Asp Thr Thr Val Val Ile
 130 135 140
 His Leu Lys
 145

<210> 6507
 <211> 681
 <212> PRT
 <213> B.fragilis

<400> 6507

Leu Leu Ile Thr Lys Gly Cys Ser Ser Ser His Val Arg Cys Cys Leu
 1 5 10 15
 Ser His Ile Arg Ala Val Arg Pro Gly Tyr Phe Phe Ala Leu Cys Gln
 20 25 30
 Ser Phe Met Phe Ala Asp Glu Asn Val Ser Lys Gln Ile Thr Met Lys
 35 40 45
 Gly Phe Tyr Val Pro Ala Ala Leu Ser Leu Met Leu Leu Ser Leu Pro
 50 55 60
 Ile Ala Ala Gln Ser Val Ala Thr Asp Thr Ile Leu Leu Ala Thr Phe
 65 70 75 80
 Asn Asp Ser Ile Ser Leu Asp Glu Val Val Ile Lys Ala His Lys Thr
 85 90 95
 Pro Arg Ala Asn Ser Arg Trp Ser Asp Leu Gln Pro Val Asp Leu Val
 100 105 110
 Thr Val Gly Gly Ser Asn Gly Asp Leu Tyr Arg Ala Leu Gln Thr Leu
 115 120 125
 Pro Gly Ala Gln Leu Gln Gly Glu Ser Gly Arg Leu Leu Val Arg Gly
 130 135 140
 Gly Asn Ser Asn Glu Thr Gln Thr Tyr Ile Asp Gly Met His Val Leu
 145 150 155 160
 Asn Pro Tyr Thr Thr Thr Gly Thr Asp Thr Pro Ala Arg Gly Arg Tyr

				165					170					175	
Ser	Thr	Phe	Met	Phe	Ser	Gly	Val	Asn	Leu	Ala	Ser	Gly	Gly	Gln	Ser
			180					185					190		
Gln	Glu	Tyr	Gly	Glu	Ala	Leu	Ser	Ala	Val	Leu	Pro	Leu	Glu	Thr	Lys
		195					200					205			
Asp	Tyr	Ser	Thr	Val	Asn	Lys	Phe	Gly	Met	Asn	Val	Ser	Thr	Val	Gly
	210					215					220				
Met	Gly	Gly	Gly	Gly	Thr	Arg	Ala	Phe	Asn	Arg	Ser	Ser	Leu	Ser	Leu
225					230					235					240
Asn	Leu	Asp	Tyr	Gln	Asn	Leu	Ala	Pro	Tyr	Asp	Arg	Val	Tyr	Pro	Ser
				245					250					255	
Arg	Thr	Asp	Phe	Lys	Arg	Pro	Tyr	Arg	Met	Leu	Ser	Gly	Ala	Thr	Gln
			260					265					270		
Phe	Arg	Tyr	Thr	Pro	Asn	Glu	Lys	Ile	Leu	Phe	Lys	Phe	Tyr	Ala	Gly
		275					280					285			
Tyr	Asp	Arg	Thr	Asp	Phe	Ser	Asn	Tyr	Thr	Asp	Ile	Asp	Arg	His	Leu
	290					295					300				
Phe	Gly	Leu	Gly	Glu	Asn	Asn	Ile	Tyr	Leu	Asn	Thr	Thr	Phe	Arg	Lys
305					310					315					320
Arg	Thr	Ala	Ser	Asp	Trp	Asn	Trp	Phe	Ile	Gly	Thr	Ala	Tyr	Ser	Phe
				325					330					335	
Tyr	Asp	Arg	Lys	Val	Lys	Gly	Ala	Val	Lys	Asp	Arg	Asp	Val	Trp	Asn
			340					345					350		
Glu	Arg	Gln	Gln	Glu	Phe	His	Leu	Lys	Ala	Lys	Phe	Ser	Lys	Leu	Phe
		355					360					365			
Thr	Ser	Arg	Leu	Arg	Leu	Asp	Met	Gly	Val	Glu	Thr	Phe	Val	Arg	Ser
	370					375					380				
Tyr	Arg	Asn	Asp	Tyr	Gln	Leu	Glu	Thr	Leu	Arg	Asp	Thr	His	Gln	Met
385					390					395					400
Tyr	Pro	Thr	Ile	Tyr	Ala	Gly	Phe	Leu	Ser	Ser	Ala	Phe	Tyr	Leu	Ser
			405						410					415	
Glu	Asn	Leu	Lys	Thr	Glu	Ile	Ser	Leu	Arg	Pro	Glu	Tyr	Thr	Ser	Leu
			420					425					430		
Asn	Arg	Thr	Met	Asn	Trp	Ser	Pro	Arg	Ala	Ala	Val	Ser	Tyr	Thr	Trp
		435					440					445			
Asn	His	Leu	Leu	Val	Ser	Val	Val	Ala	Gly	Gln	Tyr	Thr	Gln	Leu	Pro
	450					455					460				
Glu	Asn	Asp	Tyr	Leu	Ile	Arg	Asn	Ile	Ser	Leu	Pro	Ser	Asn	Val	Cys
465					470					475					480
Arg	Gln	Val	Leu	Phe	Ser	Leu	Gln	Tyr	Glu	Gln	Gly	Gly	Arg	Phe	Tyr
				485					490					495	
Lys	Ala	Glu	Phe	Tyr	Tyr	Lys	Asn	Tyr	Lys	Lys	Leu	Glu	Leu	Ser	Val
			500					505					510		
Pro	Asp	Gly	Ile	Thr	Pro	Asp	Gly	Tyr	Gly	Tyr	Ser	Lys	Gly	Ile	Asp
		515													

Gly Arg Lys Asn Glu Tyr Gly Arg Ile Asp Gly Glu Ala Val Arg Thr
 645 650 655
 Ser Ser Asp His Phe Phe Tyr Leu Gly Val Tyr Ile Thr Leu Gly Lys
 660 665 670
 Lys Val Ala Tyr Asp Val Ser Asn Phe
 675 680

<210> 6508
 <211> 399
 <212> PRT
 <213> B.fragilis

<400> 6508

Asn Glu His Phe Lys Ile Lys Thr Ile Val Met Ile Asp Leu Gly Ser
 1 5 10 15
 Trp Met Asn Lys Ile Leu Ile Gly Trp Gly Val Asp Pro Lys Ile Ala
 20 25 30
 Asn Thr Phe Asp Glu Thr Ile Ile Ala Ile Leu Met Ile Phe Ile Ala
 35 40 45
 Val Gly Leu Asp Tyr Leu Cys Gln Ala Ile Phe Val Gly Gly Met Lys
 50 55 60
 Arg Leu Ala Arg Lys Thr Ser Tyr Lys Trp Asp Thr Leu Met Val Lys
 65 70 75 80
 His Lys Val Ile His His Leu Ile His Ile Leu Pro Gly Ile Leu Met
 85 90 95
 Tyr Met Leu Leu Pro Met Ala Phe Val His Gly Lys Thr Leu Leu Leu
 100 105 110
 Val Ser Gln Lys Ile Cys Val Ile Tyr Met Ile Phe Ala Leu Leu Leu
 115 120 125
 Ala Leu Asn Ser Ser Leu Leu Met Leu Leu Asp Ile Leu Ser Ala Lys
 130 135 140
 Glu Lys Leu Lys Asp Arg Pro Met Lys Gly Phe Ile Gln Val Leu Gln
 145 150 155 160
 Val Leu Val Phe Phe Ile Gly Gly Ile Val Ile Val Ala Ile Ile Val
 165 170 175
 Asp Lys Ser Pro Ala Thr Leu Phe Ala Gly Leu Gly Ala Ser Ala Ala
 180 185 190
 Ile Leu Met Leu Val Phe Lys Asp Ser Ile Leu Gly Phe Val Ala Gly
 195 200 205
 Ile Gln Leu Ser Ala Asn Asp Met Ile Arg Pro Gly Asp Trp Val Thr
 210 215 220
 Ile Pro Ser Thr Asn Ala Asn Gly Ile Val Glu Glu Ile Thr Leu Asn
 225 230 235 240
 Thr Val Lys Ile Gln Asn Phe Asp Asn Thr Ile Ser Thr Val Pro Pro
 245 250 255
 Tyr Ser Leu Val Asn Gly Ser Phe Gln Asn Trp Arg Gly Met Thr Glu
 260 265 270
 Ser Gly Gly Arg Arg Val Met Lys Ser Ile Phe Leu Asp Leu Thr Thr
 275 280 285
 Leu Lys Phe Cys Thr Pro Glu Met Leu Asp Thr Phe Arg Lys Glu Ile
 290 295 300
 Pro Leu Leu Ala Asp Tyr Gln Pro Glu Glu Gly Val Ile Pro Thr Asn
 305 310 315 320
 Ser Gln Val Phe Arg Val Tyr Val Glu Arg Tyr Leu Cys Ser Leu Pro
 325 330 335
 Val Val Asn Gln Asp Leu Asp Leu Ile Ile Ser Gln Lys Glu Ala Thr
 340 345 350
 Glu Tyr Gly Val Pro Ile Gln Ile Tyr Phe Phe Ser Arg Asn Lys Ile
 355 360 365

Trp Lys Glu Tyr Glu Arg Ile Gln Ser Asp Ile Phe Asp His Phe Phe
 370 375 380
 Ala Met Ile Pro Lys Phe Glu Leu Lys Val Tyr Gln Tyr Ser Asp
 385 390 395

<210> 6509
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 <212> PRT
 <213> B.fragilis

<400> 6509

Asn Thr Asn Gln Ser Ile Ser Pro Gln Lys His Asn Asn Thr Phe Met
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 Lys Lys Leu Ile Leu Ser Thr Ala Leu Leu Ala Ala Ile Cys Thr Ala
 20 25 30
 Gly Gln Ala Gln Glu Thr Asn Asp Tyr Tyr Val Lys His Val Glu Phe
 35 40 45
 Pro Gln Gly Ala Thr Leu Glu Gln Lys Val Asp Met Ala Ala Arg Leu
 50 55 60
 Val Pro Thr Pro Gln Gln Leu Glu Trp Gln Gln Met Glu Leu Thr Ala
 65 70 75 80
 Phe Leu His Phe Gly Ile Asn Thr Phe Thr Gly Arg Glu Trp Gly Asp
 85 90 95
 Gly Lys Glu Asn Pro Ala Leu Phe Asn Pro Thr Asp Phe Asp Ala Glu
 100 105 110
 Gln Trp Val Arg Ser Leu Lys Glu Ala Gly Phe Lys Met Ala Ile Leu
 115 120 125
 Thr Ala Lys His His Asp Gly Phe Cys Leu Trp Pro Thr Lys Thr Thr
 130 135 140
 Gly His Ser Val Ala Ala Ser Pro Trp Lys Asp Gly Lys Gly Asp Val
 145 150 155 160
 Val Arg Glu Leu Arg Asp Ala Cys Asp Lys Tyr Gly Ile Lys Phe Gly
 165 170 175
 Val Tyr Leu Ser Pro Trp Asp Arg Asn Ala Ser Cys Tyr Gly Asp Ser
 180 185 190
 Pro Lys Tyr Asn Glu Phe Phe Ile Glu Gln Leu Thr Glu Leu Leu Thr
 195 200 205
 Asn Tyr Gly Glu Val His Glu Val Trp Phe Asp Gly Ala Asn Gly Glu
 210 215 220
 Gly Pro Asn Gly Lys Lys Gln Glu Tyr Asp Trp Thr Ala Ile Leu Ser
 225 230 235 240
 Thr Ile Arg Arg Leu Gln Pro Arg Ala Val Thr Ala Ile Met Gly Asp
 245 250 255
 Asp Val Arg Trp Val Gly Asn Glu Arg Gly Leu Gly Arg Glu Thr Glu
 260 265 270
 Trp Ser Ala Thr Val Leu Thr Pro Gly Thr Tyr Ala Arg Cys Glu Glu
 275 280 285
 Gln Asn Lys Ala Leu Gly Val Lys Ala Thr Ser Lys Asp Leu Gly Gly
 290 295 300
 Arg Asp Met Leu Val Asn Ala Lys Glu Leu Phe Trp Tyr Pro Ser Glu
 305 310 315 320
 Val Asp Val Ser Ile Arg Pro Gly Trp Phe Tyr His Gln Gln Glu Asp
 325 330 335
 Asn Gln Val Lys Ser Leu Lys His Leu Thr Asp Ile Tyr Phe Lys Ser
 340 345 350
 Val Gly Tyr Asn Ser Val Leu Leu Leu Asn Ile Pro Pro Asp Gln Arg
 355 360 365
 Gly Arg Ile Ser Asp Ala Asp Val Asn Arg Leu Lys Glu Phe Ala Asp
 370 375 380

114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Tyr Arg Lys Glu Ile Phe Ala Asp Asn Arg Val Lys Gly Gly Leu Lys
 385 390 395 400
 Ala Trp Thr Ala Arg Pro Gly Asp Thr Arg Val Tyr Gln Leu Lys Pro
 405 410 415
 Lys Ser Glu Ile Asn Val Val Met Leu Arg Glu Asp Ile Ser Lys Gly
 420 425 430
 Gln Arg Met Glu Ala Phe Thr Val Glu Ala Leu Thr Ala Asp Gly Trp
 435 440 445
 Lys Glu Ile Ala Lys Gly Thr Val Gly Tyr Lys Arg Leu Ile Arg
 450 455 460
 Ile Pro Ala Val Glu Ala Arg Gln Leu Arg Val Lys Val Asp Ala Cys
 465 470 475 480
 Arg Leu Ala Ala Asn Ile Ser Glu Val Ala Ala Tyr Tyr Ala Arg Pro
 485 490 495
 Leu Glu Glu Ser Ala Ala Lys Glu Asn Trp Asn Asp Leu Pro Arg Thr
 500 505 510
 Ala Trp Lys Gln Val Thr Ala Ala Pro Leu Val Ile Asp Leu Gly Lys
 515 520 525
 Ala Val Asp Met Thr Gly Phe Val Tyr Ala Pro Ala Asn Ala Glu Ala
 530 535 540
 Lys Pro Thr Met Ala Phe Arg Tyr Lys Phe Tyr Ile Ser Thr Asn Gly
 545 550 555 560
 Arg Asp Trp Lys Glu Val Pro Thr Thr Gly Glu Phe Ser Asn Ile Met
 565 570 575
 His Asn Pro Val Pro Gln Thr Val Ser Phe Gly Asn Lys Val Ser Ala
 580 585 590
 Arg Tyr Ile Lys Leu Asp Ala Thr Thr Pro Asp Thr Thr Pro Ala Arg
 595 600 605
 Val Asp Leu Lys Glu Ile Gly Ile Arg Leu Gln Lys
 610 615 620

<210> 6510

<211> 322

<212> PRT

<213> B.fragilis

<400> 6510

Ser Pro Cys Leu Ser Tyr Leu Ser Asp Ile Leu Tyr Tyr Phe Ala Gly
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 Lys Ala Asn Lys Ile Gln Tyr Met Gly Ser His Trp Gly Glu Lys Ile
 20 25 30
 Arg Arg Tyr Leu Gln Ser Leu Tyr Pro Val Ala Tyr Gln Arg Trp Lys
 35 40 45
 Val Val Leu Ile Ser Ser Leu Val Val Phe Leu Ile Leu Leu Val Leu
 50 55 60
 Gln Pro Phe Gly Ile Ser Gly Ile Arg Gln His Lys Phe Trp Ile Leu
 65 70 75 80
 Val Gly Phe Met Gly Val Thr Ala Val Ser Leu Ser Ile Pro Met Tyr
 85 90 95
 Val Phe Gly Lys Leu Phe Pro Lys Phe Tyr Lys Glu Glu Thr Trp Thr
 100 105 110
 Val Trp Lys Gln Ile Val Asn Leu Leu Gln Ile Leu Phe Phe Ile Ala
 115 120 125
 Ile Gly Asn Trp Ile Tyr Ser Thr Leu Val Phe Gly Trp Gly Leu Arg
 130 135 140
 Trp Asp Val Phe Cys Ala Phe Ala Leu Phe Thr Leu Val Ile Gly Leu
 145 150 155 160
 Phe Pro Thr Val Leu Phe Ile Leu Leu Asn Gln Asn Arg Leu Leu Ala
 165 170 175

Ile His Leu Lys Glu Ala Thr Glu Met Asn Leu His Leu Gln Arg Ser
 180 185 190
 Val Leu Leu Ala Glu Ser Val Glu Thr Thr Gln Asp Ser Pro Phe Leu
 195 200 205
 Leu Phe Gln Gly Gly Ile Arg Glu Ser Leu Glu Leu Asp Ser Lys Asp
 210 215 220
 Leu Leu Tyr Val Glu Ser Asn Gly Asn Tyr Ile Arg Val Asn Tyr Gln
 225 230 235 240
 Lys Ala Gly Lys Asn Val Gln Cys Leu Leu Arg Ala Thr Met Lys Gln
 245 250 255
 Ala Glu Glu Val Thr Ala Val Cys Pro Leu Val Leu Lys Cys His Arg
 260 265 270
 Ala Phe Leu Val Asn Val Arg Lys Val Val Lys Val Asn Gly Asn Ser
 275 280 285
 Gln Gly Tyr Arg Leu Leu Leu Glu Gly Cys Pro Glu Glu Ile Pro Val
 290 295 300
 Ser Arg Gly Tyr Ser Lys Gln Val Lys Glu Leu Ile Glu Gly Ile Ser
 305 310 315 320
 Gly Asp

<210> 6511
 <211> 91
 <212> PRT
 <213> B.fragilis

<400> 6511
 Ser Val Gln Lys Ser Ile Phe Ala Pro Thr Lys Leu Ile Glu Met Leu
 1 5 10 15
 Tyr Thr Ile Leu Ile Thr Leu Leu Ile Val Ala Ile Cys Leu Gly Leu
 20 25 30
 Leu Gly Ile Lys Val Phe Phe Thr Lys Gly Gly Lys Phe Pro Asn Gly
 35 40 45
 His Val Ser Gly Asn Lys Ala Leu Arg Glu Arg Gly Ile Ser Cys Ala
 50 55 60
 Gln Ser Gln Asp Arg Glu Ala Gln Lys Lys Arg Phe Ser Ile Asp
 65 70 75 80
 Glu Ile Glu Lys Ala Leu Asn Asp Ser Met Asn
 85 90

<210> 6512
 <211> 209
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 <213> B.fragilis

<400> 6512
 Leu Ile Lys Lys Leu Tyr Phe Thr Ser Met Lys Arg Met Asn Tyr Leu
 1 5 10 15
 Ile Asn Gly Phe Ala Ala Leu Ala Phe Leu Phe Leu Phe Ser Gln Cys
 20 25 30
 Ala Gly Lys Ala Asp Asn Ala Ala Pro Ala Ala Ser Gly Asn Ala Asn
 35 40 45
 Gly Thr Ser Gly Leu Lys Ile Ala Tyr Val Glu Val Asp Thr Leu Leu
 50 55 60
 Ser Gln Tyr Asn Phe Cys Lys Asp Leu Asn Ala Asp Met Ile Ser Lys
 65 70 75 80
 Glu Glu Asn Ser Arg Met Val Leu Asn Gln Lys Ala Asn Glu Leu Arg
 85 90 95
 Lys Ser Gln Gln Glu Phe Gln Lys Lys Tyr Glu Ser Asn Ala Phe Ile

	100		105		110										
Ser	Gln	Glu	Arg	Ala	Gln	Gln	Glu	Tyr	Thr	Arg	Leu	Ala	Lys	Leu	Glu
	115						120					125			
Gln	Asp	Leu	Gln	Ala	Leu	Gln	Asn	Lys	Leu	Ala	Thr	Glu	Met	Ala	Ser
	130						135				140				
Glu	Asn	Ala	Lys	Asn	Ser	Gln	Ile	Leu	Arg	Asp	Ser	Ile	Asn	Ala	Phe
145				150					155						160
Leu	Lys	Glu	Tyr	Asn	Lys	Thr	Lys	Gly	Tyr	Asn	Leu	Ile	Ile	Ser	Asn
			165						170					175	
Thr	Ser	Phe	Asp	Asn	Leu	Leu	Tyr	Ala	Asp	Ser	Thr	Leu	Asn	Ile	Thr
			180					185					190		
Lys	Glu	Ile	Val	Asp	Gly	Leu	Asn	Ala	Arg	Tyr	Thr	Pro	Val	Ala	Lys
	195						200					205			
Lys															

<210> 6513

<211> 288

<212> PRT

<213> B.fragilis

<400> 6513

Gln	Ile	Ile	Glu	Ser	Ile	Leu	Leu	Ile	Tyr	Lys	Ser	Leu	Leu	Phe	Met
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Met	Arg	Ile	Arg	Ile	Ile	Ile	Thr	Leu	Leu	Ile	Ala	Leu	Phe	Val	Glu
			20					25					30		
Ser	Arg	Gln	Glu	Ala	Phe	Gly	Gln	Thr	Val	Asp	Thr	Leu	Ser	Leu	Ser
		35				40					45				
Asp	Lys	Val	Ile	Arg	Thr	Ala	Ser	Phe	Ala	Thr	Gly	Phe	Arg	Gly	Glu
	50					55					60				
Val	Trp	Arg	Asn	Pro	Ala	Leu	Tyr	Tyr	Tyr	Tyr	Thr	Pro	Tyr	Thr	Trp
65				70					75					80	
Thr	Arg	Leu	Asp	Val	Asn	Gly	Ala	Tyr	His	Asp	Lys	Gly	Lys	Ala	Ser
			85					90					95		
Leu	Lys	Gln	Glu	Gly	Asp	Lys	Asp	Thr	His	Ile	Gly	Val	Asp	Val	His
		100						105					110		
Ser	Phe	Val	Ile	Leu	Ser	Gly	Arg	Asp	Arg	Val	Phe	Gly	Ser	Ala	Gly
	115						120					125			
Tyr	Arg	Ser	Glu	Lys	Gln	Glu	Asn	Val	Leu	Trp	Asn	Glu	Asn	Ile	Asp
	130					135					140				
Trp	Lys	Leu	Ile	Ala	Pro	Tyr	Val	Thr	Gly	Asp	Ser	Ile	Gly	Gly	Phe
145				150						155					160
Leu	Lys	Gly	Glu	Thr	Tyr	Tyr	Phe	Asn	Gly	Gly	Tyr	Ala	Ser	Glu	Ser
			165						170					175	
Gly	Ser	Trp	Thr	Trp	Gly	Ile	Thr	Gly	Gly	Tyr	Arg	Ala	Ser	His	Asn
			180					185					190		
Tyr	Arg	Asp	Lys	Asp	Pro	Arg	Pro	Arg	Asn	Thr	Ala	Ser	Asp	Leu	Ser
	195						200					205			
Phe	Ala	Leu	Gly	Ala	Gly	Tyr	Arg	Leu	Gly	Ala	Tyr	Arg	Leu	Gly	Val
	210					215					220				
Ser	Thr	Asp	Phe	Arg	Leu	Tyr	Gln	Gln	Lys	Ser	Glu	Ile	Ser	Phe	Leu
225					230					235					240
Ala	Asp	Lys	Gly	Ser	Thr	Ser	Val	Tyr	His	Met	Leu	Gly	Leu	Gly	Met
			245						250					255	
Asp	Tyr	Val	Arg	Phe	Ala	Gly	Asn	Gln	Thr	Gly	Thr	Lys	His	Gln	Gly
		260					265					270			
Thr	Ser	Ser	Pro	Arg	Gly	Trp	Met	Gly	Ser	Ala	Leu	Cys	Thr	Leu	Ala
	275						280					285			

<210> 6514
 <211> 356
 <212> PRT
 <213> B.fragilis

<400> 6514

Thr	Ser	Thr	Glu	Gln	His	Leu	Lys	Gly	Ile	Gln	Ser	Met	Leu	Arg	Leu
1			5					10					15		
Phe	Phe	Ile	Leu	Leu	Ile	Ser	Leu	Ser	Ser	Leu	Phe	Leu	Ser	Ala	Gln
		20						25				30			
Asn	Arg	Pro	Pro	Phe	Arg	Val	Val	Phe	Trp	Asn	Thr	Glu	Asn	Phe	Phe
		35					40					45			
Asp	Thr	Arg	His	Asp	Ser	Leu	Lys	Asn	Asp	Met	Glu	Phe	Leu	Pro	His
	50					55				60					
Ser	Met	Arg	His	Trp	Asn	His	Arg	Arg	Tyr	Lys	Lys	Lys	Leu	Asp	Asn
65					70					75				80	
Val	Ala	Arg	Thr	Leu	Thr	Ala	Ile	Gly	Glu	Trp	Asn	Phe	Pro	Ala	Leu
			85						90					95	
Ile	Gly	Leu	Cys	Glu	Val	Glu	Asn	Asp	Thr	Val	Met	Arg	Asp	Leu	Thr
		100						105					110		
Leu	Tyr	Ser	Pro	Leu	Lys	Glu	Ala	Gly	Tyr	Arg	Tyr	Val	Met	Thr	His
	115						120					125			
Cys	Ser	Asp	Leu	Arg	Gly	Ile	Asp	Val	Ala	Leu	Leu	Tyr	Gln	Arg	Asp
	130					135				140					
Arg	Phe	Lys	Leu	Leu	Ser	Tyr	Ser	Ala	Leu	Ser	Val	Gly	Asn	Phe	Lys
145					150					155					160
Gly	His	Arg	Pro	Thr	Arg	Asp	Ile	Leu	His	Val	Ser	Gly	Leu	Leu	Leu
			165						170					175	
Thr	Gly	Asp	Thr	Leu	Asp	Ile	Met	Val	Ala	His	Leu	Pro	Ser	Arg	Ser
		180						185					190		
Gly	Gly	Val	Arg	Gln	Ser	Glu	Pro	Tyr	Arg	Leu	Tyr	Ala	Ala	Gln	Lys
		195					200					205			
Leu	Lys	Asp	Ala	Ala	Asp	Ser	Leu	Ile	Asn	Val	Arg	Pro	Ser	Ala	Lys
	210					215					220				
Leu	Ile	Ile	Met	Gly	Asp	Phe	Asn	Asp	Tyr	Pro	Thr	Asp	Lys	Ser	Val
225					230					235					240
Val	Gln	Val	Leu	Gln	Ala	Leu	Ser	Pro	Glu	Val	Ser	Thr	His	His	Asp
			245						250					255	
Arg	Leu	Tyr	His	Leu	Leu	Ala	Arg	Lys	Ala	Lys	Asp	Arg	Asn	Phe	Gly
			260					265					270		
Ser	Tyr	Lys	Tyr	Gln	Gly	Glu	Trp	Gly	Leu	Leu	Asp	His	Leu	Ile	Val
		275					280					285			
Ser	Gly	Thr	Leu	Leu	Asp	Ile	Ser	Gly	Thr	Leu	Phe	Thr	Glu	Glu	Lys
	290					295					300				
Lys	Ala	Asn	Val	Ala	Arg	Leu	Pro	Phe	Leu	Leu	Thr	Lys	Asp	Glu	Lys
305					310						315				320
Tyr	Gly	Gly	Met	Gln	Pro	Phe	Arg	Thr	Tyr	Val	Gly	Met	Lys	Tyr	Gln
			325						330					335	
Glu	Gly	Tyr	Ser	Asp	His	Leu	Pro	Val	Tyr	Val	Asp	Phe	Glu	Thr	Asn
			340					345					350		
Gln	Ser	Glu	Tyr												
		355													

<210> 6515
 <211> 408
 <212> PRT
 <213> B.fragilis

<400> 6515

Asn	Lys	Ile	Glu	Met	Lys	Met	Lys	Lys	Asn	Gln	Leu	Thr	Met	Ala	Ile
1				5					10					15	
Leu	Phe	Ala	Thr	Met	Leu	Gly	Phe	Thr	Ala	Cys	Ser	Asp	Asp	Asp	Lys
			20					25					30		
Val	Asn	Ile	Ser	Thr	Val	Ser	Ile	Thr	Thr	Thr	Val	Asp	Thr	Thr	Ile
		35					40					45			
Glu	Gly	Leu	Gln	Leu	Thr	Gly	Gly	Thr	Tyr	Thr	Phe	Glu	Asn	Ile	Asn
	50					55					60				
Thr	Ser	Val	Lys	Thr	Asp	Val	Ala	Tyr	Pro	Leu	Gln	Ser	Ile	Glu	Leu
65					70					75					80
Ala	Asp	Gly	Leu	Tyr	Asn	Val	Thr	Phe	Ile	Gly	Lys	Gly	Thr	Tyr	Ser
				85					90					95	
Gln	Asn	Gly	Thr	Ser	Val	Glu	Val	Asp	Val	Gln	Gly	Val	Gln	Gln	Asn
			100					105					110		
Val	Thr	Val	Ser	Gly	Gly	Ser	Cys	Lys	Leu	Glu	Leu	Thr	Val	His	Val
		115					120						125		
Leu	Asn	Thr	Gly	Glu	Pro	Gly	Phe	Val	Ile	Ala	Glu	Ile	Phe	Ile	Pro
	130					135					140				
Gly	Thr	Tyr	Asn	Glu	Ala	Gly	Lys	Gln	Tyr	Asn	Gly	Asp	Gln	Tyr	Val
145					150					155					160
Arg	Ile	Tyr	Asn	Asn	Ser	Asp	Lys	Val	Leu	Tyr	Ala	Asp	Gly	Leu	Ile
			165						170					175	
Phe	Met	Glu	Ser	Gln	Phe	Gln	Thr	Thr	Gln	Lys	Tyr	Gln	Ser	Val	Asp
		180					185						190		
Pro	Asp	Ile	Met	Asn	Glu	Ala	Ile	Ala	Val	Gly	Ser	Val	Val	Ala	Val
		195					200					205			
Pro	Gly	Ser	Gly	Thr	Asp	His	Pro	Val	Gln	Pro	Gly	Glu	Ser	Phe	Ile
	210					215					220				
Leu	Cys	Asp	Asn	Ala	Ile	Asn	His	Lys	Glu	Ala	Asn	Pro	Asn	Ser	Ile
225					230					235					240
Asp	Leu	Ser	Lys	Ala	Asn	Phe	Glu	Trp	Tyr	Ile	Glu	Ser	Lys	Gln	Asp
			245						250					255	
Val	Asp	Asn	Pro	Ala	Val	Pro	Asn	Leu	Asp	Ile	Tyr	Tyr	Cys	Tyr	Ser
		260					265						270		
Lys	Thr	Ile	Trp	Val	Leu	Asn	Lys	Gln	Gly	Asn	Arg	Ala	Tyr	Ala	Ile
		275					280						285		
Gly	Arg	Leu	Pro	Gln	Gly	Met	Thr	Lys	Glu	Lys	Tyr	Ile	Ser	Asp	Tyr
	290					295					300				
Ala	Tyr	Asn	Tyr	Thr	Tyr	Ile	Met	Gln	Asn	Gly	Thr	Ala	Ser	Lys	Pro
305					310					315					320
Gln	Ser	Lys	Tyr	Lys	Phe	Pro	Asn	Glu	Trp	Ile	Ile	Asp	Ala	Val	Asn
			325						330					335	
Val	Gly	Ala	Ser	Asn	Glu	Trp	Gln	Trp	Asn	Val	Thr	Ser	Thr	Gly	Leu
		340					345						350		
Asp	Met	Gly	His	Thr	Tyr	Val	Gly	Val	Asn	Asn	Thr	Ile	Ala	Glu	Asn
		355					360					365			
Ile	Gly	Lys	Cys	Val	Met	Arg	Lys	Val	Ala	Tyr	Lys	Asp	Gly	Glu	Arg
	370					375					380				
Glu	Val	Leu	Gln	Asp	Thr	Asn	Asn	Ser	Thr	Val	Asp	Phe	Thr	Pro	Ala
385					390					395					400
Ala	Thr	Pro	Ser	Leu	Phe	Asn	Lys								
				405											

<210> 6516

<211> 114

<212> PRT

<213> B.fragilis

<400> 6516

Val Ile Ser Phe Ile Phe Ala Thr Gly Ile Asn Glu Lys Ile Met Gly
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 Lys Leu Ile Thr Ile Trp Glu Phe Ile Gly Arg His Lys Tyr Trp Ile
 20 25 30
 Thr Val Val Ala Phe Gly Val Ile Ile Gly Phe Leu Asp Glu Asn Ser
 35 40 45
 Met Ile Arg Arg Ile Gly Tyr Ala Arg Glu Ile Ser Arg Leu Gln Gly
 50 55 60
 Glu Ile Asp Lys Tyr Arg Ala Glu Tyr Glu Glu Asn Thr Glu Arg Leu
 65 70 75 80
 Asn Glu Leu Ser Thr Asn Pro Glu Ala Ile Glu Gln Ile Ala Arg Glu
 85 90 95
 Lys Tyr Leu Met Lys Lys Pro Asn Glu Asp Ile Tyr Val Phe Asp Glu
 100 105 110
 Glu Glu

<210> 6517
 <211> 939
 <212> PRT
 <213> B.fragilis

<400> 6517
 Ile Asp Thr Leu Leu Tyr Leu Ile Phe Gly Ile Ala Ser Ala Ala Asp
 1 5 10 15
 Ile Leu Tyr Phe Cys Glu Leu Ile Glu Ser Lys Met Ile Arg Lys Ile
 20 25 30
 Ala Tyr Thr Phe Phe Ser Phe Leu Ile Cys Cys Asn Val Ser Leu Ala
 35 40 45
 Trp Gly Gln Thr Phe Ala Phe Arg Gly Thr Val Leu Asp Glu Gln Thr
 50 55 60
 His Lys Ala Leu Asp Tyr Ala Thr Ile Gln Leu Phe Val Glu Lys Gln
 65 70 75 80
 Phe Ala Tyr Gly Gly Ile Thr Asp Ala Asn Gly His Phe Glu Leu Leu
 85 90 95
 His Ile His Pro Gly Thr Tyr Arg Ile Ile Ile Ser Tyr Leu Gly Tyr
 100 105 110
 Asp Ser Thr Glu Lys Glu Ile Lys Val Val Gly Asn Thr Ser Asp Ile
 115 120 125
 Phe Tyr Leu Lys Pro Ser Asn Met Ala Leu Asn Glu Val Val Val Thr
 130 135 140
 Ala Ser Glu Ser Lys Arg Ala Thr Ser Ala Ser Ile Val Asp Arg Thr
 145 150 155 160
 Ala Met Lys His Leu Gln Pro Ser Ser Phe Ser Asp Leu Met Glu Leu
 165 170 175
 Val Pro Gly Gly Lys Ser Ala Asp Pro Gln Met Gly Gln Ala Asn Leu
 180 185 190
 Ile Arg Ile Arg Glu Thr Gly Lys Thr Glu Asp Ile Ser Ser Leu Gly
 195 200 205
 Val Gly Phe Tyr Ile Asp Gly Ile Phe Gln Asn Thr Asp Ala Asn Leu
 210 215 220
 Gln Tyr Met Pro Ser Ser Thr Ser Ala Val Asn Ala Thr Ser Thr Met
 225 230 235 240
 Ser Lys Gly Val Asp Met Arg Thr Ile Pro Thr Asp Asn Ile Glu Lys
 245 250 255
 Val Glu Ile Ile Arg Gly Ile Pro Ser Val Ala Tyr Gly Asn Val Ala
 260 265 270
 Asn Gly Ala Val Ile Ile Gln Arg Lys Thr Ser Glu Ser Pro Leu Ser
 275 280 285

Ala	Arg	Phe	Lys	Ala	Asp	Lys	Thr	Ser	Lys	Leu	Phe	Ser	Val	Gly	Lys	
290						295					300					
Gly	Phe	Arg	Leu	Asp	Gly	Asn	Gly	Arg	Tyr	Val	Leu	Asn	Thr	Asp	Leu	
305				310						315					320	
Ser	Tyr	Leu	Asp	Ser	Lys	Ile	Asp	Pro	Arg	Asn	Ser	Val	Lys	Asn	Tyr	
				325					330						335	
Thr	Arg	Leu	Thr	Ala	Ser	Ala	Arg	Leu	Asp	Gly	Lys	Trp	Leu	Trp	Asn	
			340					345							350	
Glu	Arg	Asn	Ile	His	Trp	Asn	Leu	Ser	Thr	Asp	Tyr	Thr	Gly	Ser	Phe	
		355					360					365				
Asp	Asp	Ala	Lys	Arg	Asp	Lys	Asp	Ala	Thr	Val	Lys	Glu	Asp	Ser	Tyr	
	370					375					380					
Lys	Ser	Asp	Phe	Ser	Ser	Phe	Lys	Met	Ala	Gly	Lys	Trp	Asn	Leu	Lys	
385					390					395					400	
Phe	Ser	Asn	His	Ser	Trp	Ile	Arg	Glu	Ile	His	Ala	Ala	Thr	Ser	Val	
			405					410							415	
Ser	Trp	Gln	Trp	Glu	Lys	Met	Arg	Glu	Thr	Lys	Ser	Val	Ser	Leu	Asn	
		420						425							430	
Arg	Pro	Ala	Ala	Ile	Ala	Thr	Gln	Thr	Glu	Thr	Gly	Glu	Ser	Asp	Gly	
	435					440						445				
Ile	Tyr	Leu	Pro	Tyr	Asn	Tyr	Val	Ala	Gln	Met	Glu	Ile	Asp	Gly	Lys	
450					455						460					
Pro	Leu	Tyr	Val	Thr	Val	Ser	Ala	Arg	Thr	His	Leu	Ala	Phe	Pro	Leu	
465					470					475					480	
Gly	Gly	Leu	Gln	Asn	Arg	Met	Asn	Leu	Gly	Val	Glu	Trp	Asn	Tyr	Gln	
			485					490							495	
Lys	Asn	Leu	Gly	Lys	Gly	Gln	Val	Phe	Asp	Val	Thr	Arg	Pro	Ile	Ser	
		500						505							510	
Glu	Gly	Leu	Ser	Thr	Arg	Pro	Arg	Arg	Phe	Lys	Asp	Ile	Pro	Gly	Leu	
		515					520					525				
Gln	Pro	Phe	Ala	Phe	Tyr	Ala	Glu	Glu	Val	Leu	Asn	Leu	Pro	Val	Lys	
	530					535					540					
Arg	His	Lys	Leu	Ala	Phe	Thr	Ala	Gly	Ile	Arg	Leu	Gln	Ser	Leu	Leu	
545					550					555					560	
Gly	Leu	Asp	Arg	Lys	Tyr	Glu	Met	Gln	Gly	Lys	Ile	Tyr	Pro	Asp	Leu	
			565					570							575	
Arg	Leu	Asp	Leu	Gln	Trp	Ser	Leu	Pro	Thr	Ser	Asn	Gly	Trp	Asn	Ile	
		580						585							590	
Ala	Phe	Ser	Gly	Gly	Leu	Gly	Trp	Ile	Ser	Arg	Met	Pro	Thr	Thr	Ala	
		595					600					605				
Gln	Leu	Tyr	Pro	Asp	Phe	Lys	Tyr	Val	Asp	Leu	Ile	Gln	Leu	Asn	Tyr	
	610					615					620					
Tyr	His	Asn	His	Pro	Asp	Tyr	Arg	Arg	Ile	Asn	Met	Met	Thr	Tyr	Lys	
625					630					635					640	
Trp	Asp	Asn	Thr	Asn	Tyr	Gln	Leu	Glu	Pro	Ala	Arg	Asn	Met	Lys	Trp	
			645					650							655	
Glu	Val	Arg	Ala	Asp	Ile	Gly	Tyr	Lys	Gly	Asn	Arg	Leu	Ser	Ala	Thr	
		660						665							670	
Tyr	Phe	Arg	Glu	Arg	Met	Asn	Asn	Ala	Phe	Asp	Asp	Leu	Thr	Tyr	Tyr	
		675					680					685				
Lys	Ser	Leu	Ala	Tyr	Lys	Leu	Tyr	Asp	Pro	Ala	Ser	Ile	Asp	Gly	Ser	
	690					695					700					
Ala	Leu	Thr	Ala	Pro	Pro	Glu	Leu	Ser	Gln	Leu	Thr	Tyr	Ala	Asn	Glu	
705				710						715					720	
Tyr	Asn	Leu	Asp	Val	Tyr	Ser	Thr	Gln	Gly	Asn	Gly	Met	Lys	Val	His	
			725					730							735	
Lys	Glu	Gly	Val	Glu	Phe	Gln	Phe	Ala	Ser	Arg	Arg	Ile	Glu	Ser	Leu	
		740						745					750			
Lys	Thr	Arg	Val	Thr	Val	Tyr	Gly	Ala	Trp	Ile	Lys	Thr	Val	Tyr	Ser	

Category	Sub-category	Value	Unit
Total	1990	100	%
	2000	100	%
Agriculture	1990	10	%
	2000	10	%
Industry	1990	40	%
	2000	40	%
Services	1990	50	%
	2000	50	%

<400> 6518

Gln	His	Thr	Trp	Ile	Val	His	Ile	Ala	Cys	Met	Asn	Val	Arg	Lys	Ile
1				5					10					15	
Ile	Leu	Pro	Ser	Leu	Ser	Gly	His	Trp	Ala	Thr	Lys	Pro	Gly	Asn	Gly
			20					25					30		
Ile	Asn	Phe	Glu	Arg	Thr	Tyr	Asp	Trp	Leu	Lys	Ser	Val	Glu	Lys	Ser
		35					40					45			
Arg	Pro	Val	Gln	Tyr	Glu	Arg	Ala	Glu	Gln	Asn	Tyr	Asn	Thr	Asp	Ile
	50					55					60				
Tyr	Cys	Arg	Met	Tyr	Arg	Ser	Val	Asp	Glu	Ile	Lys	Ala	Tyr	Leu	Ala
65					70					75				80	
Gln	Lys	Asp	Ile	Tyr	Arg	Pro	Phe	Ile	Leu	Cys	Glu	Tyr	Val	His	Ala
				85					90					95	
Met	Gly	Asn	Ser	Val	Gly	Gly	Leu	Lys	Glu	Tyr	Trp	Asp	Val	Phe	Glu
			100					105					110		
Asn	Asn	Pro	Met	Ala	Gln	Gly	Gly	Cys	Val	Trp	Asp	Trp	Val	Asp	Gln
		115					120					125			
Ser	Phe	Arg	Glu	Ile	Asp	Ser	Asn	Gly	Arg	Trp	Tyr	Trp	Ser	Tyr	Gly
	130					135					140				
Gly	Asp	Tyr	Gly	Pro	Lys	Gly	Ile	Pro	Ser	Phe	Gly	Asn	Phe	Cys	Cys
145					150					155				160	
Asn	Gly	Leu	Val	Ser	Ala	Asp	Arg	Val	Pro	His	Pro	His	Leu	Leu	Glu
				165					170					175	
Val	Lys	Lys	Ile	Tyr	Gln	Asn	Ile	Lys	Cys	Thr	Leu	Ile	Asn	Lys	Asn
			180					185					190		
Asn	Leu	Thr	Val	Arg	Val	Lys	Asn	Trp	Phe	Asp	Phe	Ser	Asn	Leu	Asn
		195					200					205			
Glu	Tyr	Ile	Leu	His	Trp	Gln	Val	Val	Gly	Asp	Asn	Gly	Lys	Leu	Leu
	210					215					220				
Ala	Glu	Gly	Asn	Lys	Glu	Val	Asn	Cys	Ala	Pro	His	Ala	Thr	Ala	Asp

225 230 235 240
 Val Thr Leu Gly Lys Val Ala Leu Pro Ala Asn Val Arg Glu Gly Tyr
 245 250 255
 Leu Asn Leu Ser Trp Thr Arg Lys Glu Ala Ser Pro Met Val Gly Thr
 260 265 270
 Asp Trp Glu Val Ala Tyr Asp Gln Phe Val Leu Pro Gly Thr Lys Gly
 275 280 285
 Ser Thr Ala Tyr Leu Pro Ala Lys Ala Gly Gln Thr Ala Phe Thr Val
 290 295 300
 Asp Lys Glu Thr Gly Ala Leu Asn Ser Leu Thr Leu Asp Gly Gln Glu
 305 310 315 320
 Leu Leu Ala Thr Pro Val Thr Leu Ser Leu Phe Arg Pro Ala Thr Asp
 325 330 335
 Asn Asp Asn Arg Asp Arg Asn Gly Ala Tyr Leu Trp Arg Lys Ala Gly
 340 345 350
 Leu Asn Gln Leu Thr Gln Lys Val Val Ser Leu Lys Asp Gly Lys Lys
 355 360 365
 Ala Ala Thr Ala Lys Val Glu Ile Leu Asn Ala Lys Gly Met Lys Val
 370 375 380
 Gly Asp Ala Asp Phe Ala Tyr Ser Leu Asn Ser Ala Gly Ala Leu Lys
 385 390 395 400
 Thr Lys Val Thr Phe Arg Pro Asp Thr Ala Val Val Lys Ser Met Ala
 405 410 415
 Arg Leu Gly Leu Thr Phe Glu Met Asn Asp Thr Tyr Gly Asn Val Ala
 420 425 430
 Tyr Leu Gly Arg Gly Asp Asn Glu Thr Tyr Ser Asp Arg Met Gln Ser
 435 440 445
 Gly Lys Ile Ala Leu Tyr Gln Thr Thr Ala Glu Arg Met Phe His Tyr
 450 455 460
 Tyr Val Thr Pro Gln Ser Thr Gly Asn Arg Thr Asp Val Arg Trp Met
 465 470 475 480
 Lys Leu Thr Asp Glu Thr Gly Gln Gly Ile Phe Val Asp Ser Asn Arg
 485 490 495
 Pro Phe Gln Phe Ser Val Ile Pro Phe Ala Asp Asp Val Leu Glu Lys
 500 505 510
 Ala Arg His Ile Asn Asp Leu Glu Arg Asn Gly His Val Thr Val His
 515 520 525
 Leu Asp Ala Glu Gln Ala Gly Val Gly Thr Ala Thr Cys Gly Pro Gly
 530 535 540
 Val Gln Pro Gln Tyr Arg Val Pro Val Thr Glu Gln Ser Phe Glu Phe
 545 550 555 560
 Thr Leu Arg Thr Val Lys
 565

<210> 6519

<211> 641

<212> PRT

<213> B.fragilis

<400> 6519

Asn Leu Phe Arg Phe Leu Phe Tyr Pro Cys Thr Phe Leu Arg Thr Phe
 1 5 10 15
 Ala Gln Thr Gln Lys Ile Glu Ile Ile Arg Asn Met Glu Asn Tyr Ile
 20 25 30
 Val Ser Ala Arg Lys Tyr Arg Pro Ser Thr Phe Glu Ser Val Val Gly
 35 40 45
 Gln Arg Ala Leu Thr Thr Thr Leu Lys Asn Ala Ile Ala Thr Gln Lys
 50 55 60
 Leu Ala His Ala Tyr Leu Phe Cys Gly Pro Arg Gly Val Gly Lys Thr

65					70					75				80
Thr	Cys	Ala	Arg	Ile	Phe	Ala	Lys	Thr	Ile	Asn	Cys	Met	Asn	Leu
				85					90					95
Ala	Asp	Gly	Glu	Ala	Cys	Asn	Glu	Cys	Glu	Ser	Cys	Val	Ala	Phe
			100					105					110	Asn
Glu	Gln	Arg	Ser	Tyr	Asn	Ile	His	Glu	Leu	Asp	Ala	Ala	Ser	Asn
		115					120					125		Asn
Ser	Val	Asp	Asp	Ile	Arg	Gln	Leu	Val	Glu	Gln	Val	Arg	Ile	Pro
	130					135					140			Pro
Gln	Ile	Gly	Lys	Tyr	Lys	Val	Tyr	Ile	Ile	Asp	Glu	Val	His	Met
145					150					155				160
Ser	Ala	Ser	Ala	Phe	Asn	Ala	Phe	Leu	Lys	Thr	Leu	Glu	Glu	Pro
				165					170					175
Arg	His	Ala	Ile	Phe	Ile	Leu	Ala	Thr	Thr	Glu	Lys	His	Lys	Ile
			180					185					190	Leu
Pro	Thr	Ile	Leu	Ser	Arg	Cys	Gln	Ile	Tyr	Asp	Phe	Asn	Arg	Ile
	195					200					205			Ser
Val	Asp	Asp	Thr	Val	Asn	His	Leu	Thr	Tyr	Val	Ala	Ser	Lys	Glu
210					215					220				Gly
Ile	Thr	Ala	Glu	Pro	Glu	Ala	Leu	Asn	Val	Ile	Ala	Leu	Lys	Ala
225					230					235				Asp
Gly	Gly	Met	Arg	Asp	Ala	Leu	Ser	Ile	Phe	Asp	Gln	Val	Val	Ser
				245					250					Phe
Thr	Gly	Gly	Asn	Ile	Thr	Tyr	Lys	Ser	Val	Ile	Glu	Asn	Leu	Asn
			260					265					270	Val
Leu	Asp	Tyr	Glu	Tyr	Tyr	Phe	Arg	Leu	Thr	Asp	Cys	Phe	Leu	Glu
	275					280						285		Asn
Lys	Val	Ser	Asp	Ala	Leu	Leu	Leu	Phe	Asn	Asp	Val	Leu	Asn	Lys
	290					295				300				Gly
Phe	Asp	Gly	Ser	His	Phe	Ile	Thr	Gly	Leu	Ser	Ser	His	Phe	Arg
305					310				315					Asp
Leu	Leu	Val	Ser	Lys	Asp	Ala	Ala	Thr	Leu	Gln	Leu	Leu	Glu	Val
				325					330					Gly
Ala	Gly	Ile	Arg	Gln	Arg	Tyr	Gln	Glu	Gln	Ala	Gln	Lys	Cys	Ala
			340					345					350	Leu
Pro	Phe	Leu	Tyr	Arg	Ala	Met	Lys	Leu	Cys	Asn	Asp	Cys	Asp	Met
	355					360					365			Asn
Tyr	Arg	Ala	Ser	Lys	Asn	Lys	Arg	Leu	Leu	Val	Glu	Leu	Thr	Leu
	370					375					380			Ile
Gln	Val	Ala	Gln	Leu	Thr	Val	Glu	Gly	Asp	Asp	Gly	Ser	Gly	Gly
385					390				395					Arg
Gly	Pro	Lys	Gln	Ala	Ile	Lys	Pro	Val	Phe	Thr	Gln	Pro	Ala	Ala
			405						410					Ala
Gln	Gln	Pro	Gln	Val	Ala	Pro	Ile	Ala	Ser	Pro	Ser	Gln	Ser	Met
			420					425					430	Asn
Ala	Ala	Thr	Pro	Val	Ala	Pro	Gln	Ala	Val	Ser	Gln	Gln	Val	Gly
		435					440					445		Ser
Ser	Pro	Ala	Val	Asn	Val	Arg	Pro	Gly	Gly	Ala	Ile	Ser	Pro	Ser
	450				455					460				Gly
Ala	Met	Pro	Asp	Ala	Val	Arg	Met	Ala	Gln	Phe	Lys	Glu	Glu	Lys
465					470				475					Lys
Ile	Pro	Val	Met	Lys	Lys	Ser	Ser	Leu	Gly	Leu	Ser	Ile	Lys	His
				485					490					Pro
Gln	Lys	Glu	Glu	Gln	Arg	Gly	Ala	Gly	Val	Val	His	Thr	Ala	Gln
		500					505					510		
Met	Ser	Thr	Gln	Gln	Ile	Glu	Glu	Asp	Phe	Ile	Phe	Asn	Glu	Arg
		515				520						525		Asp
Leu	Asn	Tyr	Tyr	Trp	Gln	Glu	Tyr	Ala	Gly	Arg	Met	Pro	Ile	Glu
	530					535					540			Gln

Lys Ala Ile Ala Met Arg Met Gln Asn Met Arg Leu Ser Leu Leu Asn
 545 550 555 560
 Asp Thr Thr Phe Glu Val Val Val Asp Asn Glu Ile Val Ala Lys Asp
 565 570 575
 Phe Thr Ala Leu Ile Pro Gly Ile Gln Ala Tyr Leu Arg Gly Ser Leu
 580 585 590
 Lys Asn Arg Lys Val Thr Met Thr Val Arg Val Ser Glu Ala Thr Glu
 595 600 605
 Asn Val Arg Ala Val Ser Arg Val Glu Lys Phe Gln Met Met Ala Gln
 610 615 620
 Lys Asn Asn Ala Leu Leu Gln Leu Lys Glu Glu Phe Gly Leu Glu Leu
 625 630 635 640
 Tyr

<210> 6520

<211> 492

<212> PRT

<213> B.fragilis

<400> 6520

Lys Glu Lys Arg Met Glu Lys Ser Glu Leu Lys Pro Ala Gly Val Phe
 1 5 10 15
 His Phe Phe Asn Glu Ile Cys Gln Val Pro Arg Pro Ser Lys Lys Glu
 20 25 30
 Glu Lys Met Ile Ala Tyr Leu Lys Ala Phe Gly Glu Lys His Asn Leu
 35 40 45
 Glu Thr Lys Val Asp Glu Ala Gly Asn Val Leu Ile Lys Lys Pro Ala
 50 55 60
 Thr Pro Gly Lys Glu Asn Leu Lys Thr Val Ile Leu Gln Ser His Val
 65 70 75 80
 Asp Met Val Cys Glu Lys Asn Asn Asp Thr Asp His Asp Phe Leu Thr
 85 90 95
 Asp Pro Ile Glu Thr Glu Ile Asp Gly Glu Trp Met Lys Ala Lys Gly
 100 105 110
 Thr Thr Leu Gly Ala Asp Asn Gly Ile Gly Val Ala Thr Glu Leu Ala
 115 120 125
 Ile Leu Ala Asp Asp Ser Ile Glu His Gly Pro Ile Glu Cys Leu Phe
 130 135 140
 Thr Val Asp Glu Glu Thr Gly Leu Thr Gly Ala Phe Ala Leu Lys Glu
 145 150 155 160
 Gly Phe Met Ser Gly Glu Ile Leu Leu Asn Leu Asp Ser Glu Asp Glu
 165 170 175
 Gly Glu Leu Tyr Ile Gly Cys Ala Gly Gly Ile Asp Thr Val Ala Glu
 180 185 190
 Phe Gln Tyr Glu Asn Glu Met Thr Pro Ile Ser His Leu Cys Phe Arg
 195 200 205
 Ile Thr Val Lys Gly Leu Lys Gly Gly His Ser Gly Gly Asp Ile His
 210 215 220
 Leu Gly Arg Gly Asn Ala Asn Lys Ile Leu Asn Arg Phe Leu Tyr Gln
 225 230 235 240
 Met Met Thr Thr Tyr Gln Glu Asp Phe His Leu Tyr Glu Phe Asn Gly
 245 250 255
 Gly Asn Leu Arg Asn Ala Ile Pro Arg Glu Ala Ser Ala Val Phe Ser
 260 265 270
 Val Pro Glu His Tyr Lys His Asp Ile Arg Thr Ala Leu Asn Val Phe
 275 280 285
 Thr Ala Glu Ile Glu Asn Glu Leu His Arg Val Glu Pro Asp Leu Asn
 290 295 300

Ile Leu Leu Glu Thr Glu Pro His Arg Asp Trp Ser Ile Asp Ser Ser
 305 310 315 320
 Thr Ser Tyr Arg Leu Ile Thr Ser Leu Tyr Gly Cys Pro His Gly Val
 325 330 335
 Tyr Ala Met Ser Gln Asp Ile Pro Gly Leu Val Glu Thr Ser Thr Asn
 340 345 350
 Leu Ala Ser Val Lys Met Lys Pro Glu Asn Thr Ile Arg Ile Glu Thr
 355 360 365
 Ser Gln Arg Ser Ser Ile Leu Ser Ser Arg Asp Asp Ile Ala Thr Thr
 370 375 380
 Val Arg Ala Val Phe Arg Leu Ala Gly Ala Gln Val Asn Trp Gly Glu
 385 390 395 400
 Gly Tyr Pro Gly Trp Lys Pro Asn Pro Asp Ser Glu Ile Leu Lys Val
 405 410 415
 Ala Glu Glu Ser Tyr Lys Arg Leu Phe Gly Val Asp Ala Lys Val Lys
 420 425 430
 Ala Ile His Ala Gly Leu Glu Cys Gly Leu Phe Leu Asp Lys Tyr Pro
 435 440 445
 Ala Leu Asp Met Ile Ser Phe Gly Pro Thr Leu Thr Gly Val His Ser
 450 455 460
 Pro Asp Glu Arg Met His Ile Pro Ser Val Asp Lys Phe Trp Lys His
 465 470 475 480
 Leu Leu Asp Val Leu Ala His Ile Pro Ala Lys Asn
 485 490

<210> 6521

<211> 222

<212> PRT

<213> B.fragilis

<400> 6521

Thr Leu Val Gly Met Lys Phe Phe Ile Asp Thr Ala Asn Leu Asp Gln
 1 5 10 15
 Ile Arg Glu Ala His Asp Leu Gly Val Leu Asp Gly Val Thr Thr Asn
 20 25 30
 Pro Ser Leu Met Ala Lys Glu Gly Ile Lys Gly Val Glu Asn Gln Arg
 35 40 45
 Arg His Tyr Val Glu Ile Cys Asn Ile Val Gln Gly Asp Val Ser Ala
 50 55 60
 Glu Val Ile Ala Thr Asp Tyr Glu Gly Met Val Arg Glu Gly Lys Glu
 65 70 75 80
 Leu Ala Ala Leu Asn Pro His Ile Val Val Lys Val Pro Cys Ile Ala
 85 90 95
 Asp Gly Ile Lys Ala Ile Lys His Phe Ser Gly Lys Gly Ile Arg Thr
 100 105 110
 Asn Cys Thr Leu Val Phe Ser Thr Gly Gln Ala Leu Leu Ala Ala Lys
 115 120 125
 Ala Gly Ala Thr Tyr Val Ser Pro Phe Val Gly Arg Leu Asp Asp Ile
 130 135 140
 Cys Glu Asp Gly Val Gly Leu Val Ala Asn Ile Val Arg Met Tyr Arg
 145 150 155 160
 Phe Tyr Asn Tyr Pro Thr Gln Val Leu Ala Ala Ser Ile Arg Ser Ser
 165 170 175
 Lys His Ile Met Glu Cys Val Glu Ala Gly Ala Asp Val Ala Thr Cys
 180 185 190
 Pro Leu Ser Ala Ile Lys Gly Leu Met Asn His Pro Leu Thr Asp Ala
 195 200 205
 Gly Leu Lys Lys Phe Leu Glu Asp Tyr Lys Lys Val Asn Glu
 210 215 220

<210> 6522
 <211> 332
 <212> PRT
 <213> B.fragilis

<400> 6522

Ser	Lys	Asn	Ile	Ile	Asp	Met	Lys	Ala	Ile	Cys	Asn	Lys	Gly	Ile	Cys
1			5						10					15	
Val	Phe	Leu	Phe	Leu	Ser	Leu	Leu	Met	Ser	Ala	Thr	Met	Val	Asn	Ala
			20					25					30		
Gln	Arg	Val	Ile	Thr	Ala	Ser	Gly	Lys	Tyr	Ile	Thr	Lys	Asn	Ile	Lys
		35					40					45			
Val	Thr	Arg	Phe	Asp	Gln	Ile	Tyr	Leu	Lys	Gly	Ser	Pro	Thr	Ile	Glu
	50					55					60				
Tyr	Thr	Gln	Ser	Pro	Gly	Ala	Ser	Glu	Val	Gln	Ile	Ala	Gly	Ser	Asp
65					70					75					80
Asn	Leu	Val	Asp	Leu	Val	Glu	Cys	Arg	Val	Glu	Gly	Ser	Thr	Leu	Ile
			85						90					95	
Val	Asn	Met	Lys	Ser	Arg	Thr	Asn	Ile	Ser	Tyr	Gly	Lys	Glu	Gly	Arg
			100					105					110		
Leu	Lys	Ile	Leu	Val	Ser	Ser	Pro	Met	Leu	Lys	Ser	Ala	Ser	Leu	Gln
		115					120					125			
Gly	Ser	Gly	Asp	Ile	His	Leu	Gly	Ser	Leu	Lys	Val	Glu	Gly	Leu	Asp
	130					135					140				
Val	Ser	Leu	Ile	Gly	Ser	Gly	Asp	Ile	Val	Ala	Glu	Asn	Ile	Thr	Cys
145					150					155					160
Asn	Gly	Asp	Phe	Ser	Ala	Leu	Leu	Gln	Gly	Ser	Gly	Asp	Ile	Asp	Val
			165						170					175	
Lys	Gly	Gln	Leu	Arg	Ala	Lys	Ser	Val	Asn	Leu	Asn	Leu	Gln	Gly	Ser
			180					185					190		
Gly	Asp	Leu	Lys	Val	Ala	Gly	Val	Thr	Gly	Ser	Glu	Ile	Ser	Ala	Met
		195					200					205			
Leu	Gln	Gly	Ser	Gly	Asp	Leu	Lys	Val	Gly	Ser	Thr	Asn	Ile	Thr	Ser
	210					215						220			
Thr	Val	Thr	Ala	Lys	Leu	Ser	Gly	Ser	Gly	Asp	Met	Asp	Val	Leu	Asp
225					230					235					240
Ile	Arg	Ala	Asn	Ser	Val	Ser	Gly	Gln	Leu	Asp	Gly	Ser	Gly	Asp	Met
			245						250					255	
Thr	Leu	Ser	Gly	Ser	Ala	Cys	Asn	Ala	Thr	Leu	Val	Leu	Asn	Arg	Ser
		260						265					270		
Gly	Glu	Leu	Ser	Ala	Arg	Lys	Leu	Asp	Ala	Glu	Asn	Val	Thr	Ala	His
		275					280					285			
Val	Asn	Gly	Ser	Gly	Glu	Ile	Ser	Cys	Thr	Ala	Thr	Lys	Thr	Leu	Glu
	290					295					300				
Thr	Asn	Ile	Gln	Gly	Ser	Gly	Glu	Ile	Ser	Tyr	Lys	Gly	Asn	Pro	Ser
305					310					315					320
Ile	Arg	Ser	Thr	Gly	Lys	Asn	His	Leu	Asn	Arg	Leu				
			325						330						

<210> 6523
 <211> 502
 <212> PRT
 <213> B.fragilis

<400> 6523

Leu	Thr	Val	Leu	Lys	Trp	Ser	Gly	Ser	Phe	Gln	Pro	Arg	Gly	Glu	Asp
1			5						10					15	
Tyr	Glu	Gln	Ser	Pro	Tyr	Tyr	Leu	Asn	Leu	Asn	Gly	Lys	Trp	Lys	Phe

	20		25		30
His Trp Val Lys Asn Pro Asp Leu Arg Pro Lys Asp Phe Tyr Lys Pro					
35		40		45	
Ser Phe Tyr Thr Gly Gly Trp Ala Asp Ile Asn Val Pro Gly Asn Trp					
50		55		60	
Glu Arg Gln Gly Tyr Gly Thr Ala Ile Tyr Val Asn Glu Thr Tyr Glu					
65		70		75	80
Phe Asp Asp Lys Met Phe Asn Phe Lys Lys Asn Pro Pro Leu Val Pro					
85		90		95	
Tyr Lys Glu Asn Glu Val Gly Ser Tyr Arg Arg Thr Phe Thr Val Pro					
100		105		110	
Ala Gly Trp Lys Gly Arg Arg Val Val Leu Cys Cys Glu Gly Val Ile					
115		120		125	
Ser Phe Tyr Tyr Val Trp Val Asn Gly His Phe Leu Gly Tyr Asn Gln					
130		135		140	
Gly Ser Lys Thr Ala Ala Glu Trp Asp Ile Thr Asp Gln Leu Glu Glu					
145		150		155	160
Gly Glu Asn Thr Ile Ala Leu Glu Val Tyr Arg Trp Ser Ser Gly Ser					
165		170		175	
Tyr Leu Glu Cys Gln Asp Met Trp Arg Leu Ser Gly Ile Glu Arg Asp					
180		185		190	
Val Tyr Leu Tyr Ser Thr Pro Lys Gln Tyr Ile Ala Asp Tyr Lys Val					
195		200		205	
Asn Ala Thr Leu Glu Lys Glu Arg Tyr Lys Asp Gly Ile Phe Gly Leu					
210		215		220	
Asp Val Thr Val Gly Gly Pro Ala Asp Gly Val Ala Ser Val Ser Tyr					
225		230		235	240
Thr Leu Asn Asp Pro Leu Gly Arg Pro Val Leu Ser Gly Glu Met Pro					
245		250		255	
Val Lys Ser Arg Gly Leu Ser Asn Phe Ile Thr Phe Gly Glu Gln Arg					
260		265		270	
Leu Lys Asp Val Lys Arg Trp Asn Ala Glu His Pro Asn Leu Tyr Thr					
275		280		285	
Leu Val Leu Glu Leu Lys Asn Ala Gly Gly Gln Val Thr Glu Val Thr					
290		295		300	
Gly Cys Glu Val Gly Phe Arg Thr Ser Glu Ile Lys Asp Gly Arg Phe					
305		310		315	320
Cys Ile Asn Gly Val Pro Val Leu Val Lys Gly Thr Asn Arg His Glu					
325		330		335	
His Ser Gln Leu Gly Arg Thr Val Ser Lys Glu Leu Met Glu Gln Asp					
340		345		350	
Ile Arg Leu Met Lys Leu Tyr Asn Ile Asn Thr Val Arg Asn Ser His					
355		360		365	
Tyr Pro Thr Asp Pro Tyr Trp Tyr Arg Leu Cys Asp Arg Tyr Gly Leu					
370		375		380	
Tyr Met Ile Asp Glu Ala Asn Ile Glu Ser His Gly Met Gly Tyr Gly					
385		390		395	400
Pro Ala Ser Leu Ala Lys Asp Ser Thr Trp Leu Thr Ala His Met Asp					
405		410		415	
Arg Thr His Arg Met Tyr Glu Arg Ser Lys Asn His Pro Ala Ile Val					
420		425		430	
Ile Trp Ser Leu Gly Asn Glu Ala Arg Lys Arg Asn Gln Phe Arg Ala					
435		440		445	
Tyr Leu Arg Leu Ala Glu Ile Gly Arg Glu Lys Pro Ser Arg Pro Val					
450		455		460	
Arg Thr Cys Arg Ala Glu Leu Gln Tyr Arg Tyr Leu Leu Ser Asn Val					
465		470		475	480
Ser Gln Cys Arg Arg Asn Gln Gly Leu Ser Gly Pro Glu Arg Tyr Leu					
485		490		495	

Pro Ser Val His Ser Leu
500

<210> 6524
<211> 117
<212> PRT
<213> B.fragilis

<400> 6524
Arg Gly Arg Met Lys Gln Leu Ile Pro Ala Leu Phe Ala Val Gly Ala
1 5 10 15
Val Met Ala Leu Ile Gly Ala Ala Val Phe Ile Thr Gly Trp Val Tyr
20 25 30
Ala Pro Tyr Ile Tyr Thr Ile Gly Ala Gly Phe Val Ala Leu Ala Gln
35 40 45
Val Asn Thr Pro Leu Arg Ala Lys Ser Lys Thr Leu Arg Arg Leu Arg
50 55 60
Ile Gln Gln Ile Phe Gly Ala Leu Ala Leu Ile Leu Thr Gly Ala Phe
65 70 75 80
Met Phe Thr Thr Arg Gly Asn Glu Trp Ile Ala Cys Leu Thr Ile Ala
85 90 95
Ala Ile Leu Glu Leu Tyr Thr Ala Phe Arg Ile Pro Gln Glu Glu Glu
100 105 110
Lys Glu Leu Ser Lys
115

<210> 6525
<211> 355
<212> PRT
<213> B.fragilis

<220>
<221> UNSURE
<222> (77)
<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6525
Ala Phe Arg Thr Trp Trp Pro Phe Ile Arg Met Lys Arg Glu Ser Val
1 5 10 15
Leu Phe Gln Ala Ala Arg Lys His His Leu Asn Leu Leu Phe Pro Leu
20 25 30
Phe Arg Ala Asn Thr Ser Ala Ser Tyr Pro Val Ser Arg Phe Ile Ser
35 40 45
Arg Pro Ile Thr Val Leu Ser Lys Gly Phe Ala Lys Gly Phe Phe Cys
50 55 60
Ile Lys Lys Glu Thr Val Asp Lys Ile Gln Gln Phe Xaa Phe Asp Lys
65 70 75 80
Trp Ala Ile Glu Glu Arg Arg Tyr His Gln Leu Leu Ser Ile Leu Leu
85 90 95
Pro Gly Leu Lys Asn Gly Asn Leu Ala Ser Val Glu Gln Tyr Leu Gly
100 105 110
Ala Lys His Ile Glu Ala Tyr Ala Ala Val Pro Tyr Val Ala Asp Arg
115 120 125
Trp Glu Leu Asp Asp Ala Ser Leu Pro Gln Gly Ala Val Val Val Leu
130 135 140
Thr Cys Glu Gly Val Leu Tyr Ser Trp Glu Thr Tyr Arg Leu Glu Arg
145 150 155 160
Tyr Ile Ser Ala Ala Ile Ala Asn Asp Arg Ile Ser Gly Val Val Leu
165 170 175

Phe Val Asn Gly Pro Gly Gly Met Ile Thr Arg Val Asp Val Leu Glu
 180 185 190
 Lys Leu Ile Arg Gln Ser Pro Lys Pro Ile Val Ala Tyr Ile Thr Gly
 195 200 205
 Val Cys Ala Ser Ala His Phe Trp Phe Val Ser Ala Cys Ala Arg Arg
 210 215 220
 Phe Val Ser Ser Pro Met Asp Glu Ile Gly Ser Cys Gly Val Val Tyr
 225 230 235 240
 Thr Phe Gln Ser Phe Lys Glu Tyr Tyr Ala Gln Met Gly Ile Glu Ile
 245 250 255
 Glu Asp Ile Tyr Pro Asp Ser Ala Asp Leu Lys Asn Arg Ala Tyr Arg
 260 265 270
 Asp Lys Glu Glu Lys Gln Asp Asp Thr Leu Ile Lys Glu Asn Leu Ser
 275 280 285
 Phe Tyr His His Leu Phe Ala Gln Thr Ile Ala Arg Asn Leu Gly Val
 290 295 300
 Lys Tyr Asp Ala Gln Asp Pro Leu Phe Arg Gly Gln Thr Phe Phe Ala
 305 310 315 320
 Asp Thr Ala Leu Ala Lys Gly Tyr Val Asp Ala Tyr Gly Ser Leu Glu
 325 330 335
 Asp Ala Ile Leu Trp Val Ser Ala Gln Lys Thr Val Lys Arg Ala Asn
 340 345 350
 Lys Met Ile
 355

<210> 6526
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 6526
 Arg Lys Asn Ala Glu Tyr Leu Lys Ile Asn Lys Leu Tyr Asn Met Lys
 1 5 10 15
 Thr Ile Lys Arg Pro Tyr Thr Pro Val Cys Asp Leu Glu Leu Val Pro
 20 25 30
 Val Glu Cys Ile Ser Asp Phe Ala Val Ile Leu Pro Arg Ala Phe Ile
 35 40 45
 Ala Val Arg Asp Gly Ser Tyr Arg Ile Pro Val Ile Pro Gly Ser Phe
 50 55 60
 Thr Pro Gly Val Glu Ser Glu Gln Ala Asp Ser Gly Thr Ile Tyr Tyr
 65 70 75 80
 Asn Val Gly His Thr Phe Glu Val Ala Leu Thr Gly Pro Asp Ser Gln
 85 90 95
 Glu Leu Leu Ser Ala Met Ser Leu Gln Asp Leu Val Ala Ile Tyr Thr
 100 105 110
 Asn Glu Ala Gly Glu Arg Ile Val Ser Gly Ser Pro Gln Thr Pro Leu
 115 120 125
 Lys Leu Thr Phe Ser Ile Val Ser Gly Lys Tyr Gln Cys Lys Leu Ser
 130 135 140
 Gly Lys Gln Val Tyr Ile Glu Ala Tyr His Ser Pro Phe
 145 150 155

<210> 6527
 <211> 274
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE

<222> (251)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6527

Gln Asp Asp Leu Ile Leu Thr Ile Lys Val Asn Leu Phe Met Lys Asn
 1 5 10 15
 Tyr Phe Ala Ser Phe Ile Pro Ala Val Lys Ala Ile Leu Gly Ile Glu
 20 25 30
 Ala Trp Ser Lys Asp Ala Asp Lys Lys Asp Ala Leu Leu Glu Glu Gln
 35 40 45
 Lys Gln Lys Leu Lys Ala Leu Asn Phe Asn Asp Thr Phe Ile Asn Gly
 50 55 60
 Phe Cys Glu Ala Leu Lys Asp Gly Phe Pro Glu Asp Ser Ser Arg Lys
 65 70 75 80
 Asp Gly Glu Ser Gly Thr Lys Gly Ser Gly Pro Asp Pro Asn Thr Ser
 85 90 95
 Asn Ala Val Ile Gln Gly Leu Leu Ala Asp Met Thr Ala Lys Leu Val
 100 105 110
 Thr Ala Gln Glu Glu Ile Ala Val Leu Thr Lys Glu Lys Gly Glu Leu
 115 120 125
 Ser Gln Glu Val Ser Ala Lys Gln Thr Glu Ile Thr Gly Leu Gln Thr
 130 135 140
 Lys Ile Gln Thr Leu Ser Gly Leu Ala Glu Gln Asp Gly Gly Lys Gly
 145 150 155 160
 Phe Gln His Ala Arg Leu Glu Pro Asp Ala Lys Asp Ile Val Met Asn
 165 170 175
 Trp Asp Asp Glu Lys Gln Leu Gly Gly Leu Ser Gly Glu Met Phe Ala
 180 185 190
 Met Gly Pro Pro Tyr Asn Gln Arg Leu Arg Ala Lys Met Leu Tyr Arg
 195 200 205
 Lys Gly Leu Thr Arg Gln Val Pro Thr Ala Ser Ser Ile Asp Tyr Ser
 210 215 220
 Arg Leu Lys Glu Asp Leu Gly Ala Phe Tyr Arg Ile Pro Trp Gln Glu
 225 230 235 240
 Arg Leu Gln Ser Phe Leu Thr Leu Leu Pro Xaa Ile Glu Ser Ile Phe
 245 250 255
 Pro Ala Glu Phe Gly Ile Ser Gly Pro Gly Arg Ala Tyr Lys His Leu
 260 265 270
 Gly Trp

<210> 6528

<211> 168

<212> PRT

<213> B.fragilis

<400> 6528

Lys Lys His Gln Leu Met Ile Thr Thr Lys Ile Thr Val Glu Pro His
 1 5 10 15
 Leu Ala Gln Tyr Cys Tyr Ala Lys Tyr Ser Ser Asp Pro Glu Gly Ser
 20 25 30
 Met Pro Val Arg Phe Ala Asp His Leu Asp Val Tyr His Leu Val Tyr
 35 40 45
 Asn Leu Leu Glu Lys Arg Pro Val Asn Cys Pro Arg Asp Asn Gly Asn
 50 55 60
 Leu Glu Ile Val Leu Pro Asp Arg Arg Gln Gly Asp Val Pro Gly Gly
 65 70 75 80
 Lys Ser Pro Glu Arg Phe Asn Tyr Leu Gly Gln Arg Ser Gln Gly Ile
 85 90 95

Ile Asn Lys Lys Leu Lys Leu Met Met Arg Ala Glu Leu His Asp Phe
 100 105 110
 Ile Asp Glu Asn Lys His Arg Phe Gly Ile Asp Gln Leu Gln Ser Val
 115 120 125
 His Cys Phe Met Lys Lys Tyr Cys Ile Asp Ser Leu Ser Glu Asp Ala
 130 135 140
 Leu Leu Lys Asp Tyr Gln Arg Trp Arg Asp Arg Val Arg Arg Ser Ser
 145 150 155 160
 Leu Lys Arg Pro Tyr Lys Lys Lys
 165

<210> 6529
 <211> 205
 <212> PRT
 <213> B.fragilis

<400> 6529
 Lys Lys Met Glu Val Glu Leu Val Lys Thr Thr Leu His Ala Val Leu
 1 5 10 15
 Ser Pro Ser Gln Leu Gln Lys Pro Cys Val Arg Lys Lys Glu Leu Thr
 20 25 30
 Pro Leu Gln Ile Ser Leu Lys Thr Gly Ser Thr Ala Ser Gln Leu Val
 35 40 45
 Asp Glu Trp Gly Gly Thr Ile Ala Gln Leu Asn Met Gly Ala Pro Leu
 50 55 60
 Tyr Asp Val Ala Ala Asn Gly Glu Ile Pro Thr Leu Ala Asp Val Gly
 65 70 75 80
 Val Val Phe Gly Asn Ser Thr Ser Val Arg Ile Ile Thr Ser His Leu
 85 90 95
 Glu Ser Val Leu Lys Tyr Ala Gly Val Glu Leu Ser Arg Glu Gln Met
 100 105 110
 Ala Glu Thr Ala Leu Ala Ile Leu Ser Gly Tyr Trp Phe Leu Asn Leu
 115 120 125
 Ala Glu Leu Cys Ile Phe Phe Thr Arg Leu Lys Asn Gly Ser Cys Gly
 130 135 140
 Gln Leu Val Trp Gly Lys Ser Leu Asn Asn Gln Ala Val Met Val Ala
 145 150 155 160
 Leu Ser Asp Phe Cys Lys Glu Arg Arg Glu Val Ile Ile Arg Lys Glu
 165 170 175
 Thr Glu Arg Met Gly Pro Gly Leu Trp Lys Lys Ala Phe Pro Glu Arg
 180 185 190
 Arg Ile Leu Pro Pro Val Leu Cys Trp Ala Tyr Arg Val
 195 200 205

<210> 6530
 <211> 293
 <212> PRT
 <213> B.fragilis

<400> 6530
 Lys Ser Arg Arg Asn Leu Pro Arg Leu Cys Val Arg Leu Arg Thr Pro
 1 5 10 15
 Tyr Leu Ile Cys Leu Leu Cys Asn Ile Tyr Arg Asp Lys Gly Tyr Tyr
 20 25 30
 Ile Glu Trp Asp Glu Asp Leu Pro Phe Val Val Ala Asp Thr Ile Gly
 35 40 45
 Thr Thr Glu Gly Ala Val Glu Glu Val Val Lys Lys Ala Val Gln Val
 50 55 60
 Gly Phe Phe Asp Lys Ser Leu Phe Asp Gln Tyr Arg Ile Leu Thr Ser

65				70				75				80			
Asn	Gly	Ile	Gln	Asn	Arg	Phe	Lys	Ser	Ala	Val	Ser	Arg	Arg	Glu	Gly
				85				90						95	
Phe	Glu	Tyr	Ile	Pro	Glu	Tyr	Leu	Val	Ser	Val	Cys	Asn	Asn	Pro	Ile
			100					105						110	
Gln	Ser	Asn	Phe	Cys	Ile	Gln	Lys	Pro	Ser	Ser	Thr	Glu	Phe	Leu	Tyr
		115					120					125			
Ala	Glu	Thr	Gln	Pro	Asn	Arg	Val	Ser	Ala	Cys	Lys	Ser	Thr	Gln	Ser
	130					135					140				
Lys	Val	Lys	Glu	Arg	Ile	Ser	Pro	Pro	Pro	His	Ala	Arg	Glu	Gly	Gly
145					150					155					160
Ile	Ser	Gly	Ile	Arg	Leu	Phe	Ser	Asp	Lys	Ser	Leu	Thr	Glu	Cys	Tyr
			165					170						175	
Gly	Glu	Leu	Lys	Ala	Asn	Ile	Pro	Trp	Met	Glu	Gln	Phe	Cys	Met	Asn
			180					185					190		
Ile	Arg	Leu	Asp	Tyr	Pro	Asp	Phe	Thr	Pro	Glu	Leu	Phe	Tyr	Gly	Phe
		195					200					205			
Leu	Asp	Arg	Phe	Phe	Arg	Lys	Leu	Gln	Asn	Glu	Gly	Glu	Ile	Val	Lys
	210					215					220				
Ser	Pro	Lys	Asp	Ala	Met	Ser	His	Phe	Ala	Asn	Trp	Leu	Asn	Ile	Glu
225				230						235					240
Leu	Glu	Lys	Leu	Lys	Lys	Asp	Gly	Ser	Arg	Thr	Ser	Lys	Asn	His	Pro
			245						250					255	
Ala	Cys	Gly	Ser	Glu	Pro	Val	Ser	Val	Thr	Glu	Thr	Leu	Cys	Pro	Lys
			260					265					270		
Glu	Gly	Ala	Asp	Ala	Ser	Pro	Asp	Leu	Val	Lys	Asn	Trp	Ile	Asp	Gly
		275					280					285			
Leu	Ser	Ile	Gly	Gly											
	290														

<210> 6531

<211> 268

<212> PRT

<213> B.fragilis

<400> 6531

Lys	Asn	Asn	Ile	Pro	Met	Ile	Val	Ala	Trp	Phe	Ser	Cys	Gly	Val	Thr
1				5					10					15	
Ser	Ala	Val	Ala	Cys	Lys	Ile	Ala	Leu	Ser	Leu	Tyr	Asp	Asp	Val	Gln
			20					25					30		
Leu	Tyr	Tyr	Ile	Glu	Thr	Gly	Ser	Gly	His	Pro	Asp	Asn	Ala	Arg	Phe
		35					40					45			
Leu	Ser	Asp	Cys	Glu	Arg	Trp	Tyr	Asp	Gln	Pro	Ile	His	Ile	Ile	Arg
	50					55					60				
Ser	Asp	Lys	Tyr	Thr	Cys	Val	Ala	Asp	Val	Leu	Arg	Lys	Gly	Phe	Ile
65					70					75					80
Asn	Gly	Ala	His	Gly	Ala	Ala	Cys	Thr	Leu	Glu	Leu	Lys	Lys	Lys	Val
				85					90					95	
Arg	Tyr	Lys	Leu	Glu	Lys	Glu	Leu	Gly	Ser	Trp	Asp	Gly	Gln	Val	Trp
			100					105					110		
Gly	Phe	Asp	Tyr	Glu	Pro	Lys	Glu	Ile	Asn	Arg	Ala	Ile	Arg	Leu	Lys
		115					120					125			
Gln	Gln	Tyr	Pro	Asp	Thr	Lys	Pro	Leu	Phe	Pro	Leu	Ile	Glu	Lys	Gln
	130					135					140				
Ile	Thr	Lys	Pro	Asp	Ala	Met	Gly	Ile	Leu	Trp	Lys	Ala	Gly	Ile	Glu
145					150					155					160
Ile	Pro	Ala	Met	Tyr	Lys	Met	Gly	Tyr	Asn	Asn	Asn	Asn	Cys	Ile	Gly
			165					170						175	
Cys	Val	Lys	Gly	Gly	Met	Gly	Tyr	Trp	Asn	Lys	Ile	Arg	Lys	Asp	Phe

180	185	190
Pro Glu Val Phe Ala Gln Met	Ala Gln Ile Glu Arg Asp	Val Gly Ala
195	200	205
Thr Cys Leu Lys Asp Lys Asp	Gly Arg Ile Phe Leu Asp	Glu Leu Pro
210	215	220
Thr Trp Arg Gly Asp Pro Val	Glu Glu Ile Ile Pro Asp	Cys Ser Leu
225	230	235
Ile Cys Gln Ile Glu Phe Gln	Glu Ile Ile Asp Arg Gln	Val Lys Arg
245	250	255
Val Leu Lys Gly Glu Ile Ser	Ile Asn Asp Val Ala	
260	265	

<210> 6532
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 6532
Thr Met Lys Val Val Ile Tyr Trp Gln Lys Lys Ser Thr Val His His
1 5 10 15
Arg Arg Arg Ile Arg Asp Arg Phe Arg Leu Pro Asp Gly Met Thr Ile
20 25 30
Asn Gly Glu Thr Pro Ala Asp Val Arg Pro Glu Asp Met Lys Glu Leu
35 40 45
Gln Thr Leu Glu Glu Met Gly Tyr Ile Lys Leu Arg Asn Lys
50 55 60

<210> 6533
 <211> 115
 <212> PRT
 <213> B.fragilis

<400> 6533
Ser Asp His Ser Gln Arg Asp Arg Ala Asp Gly Pro Gly Ala Val Glu
1 5 10 15
Lys Gly Phe Ser Arg Thr Glu Asp Phe Ala Ala Gly Ile Val Leu Gly
20 25 30
Val Gln Gly Ile Ala Val Lys Arg Glu Arg Ala Lys Ala Asp Phe Asn
35 40 45
Ala Phe Leu Glu Phe Phe Pro Cys Leu Pro Ser Gly Tyr Asp Pro Ile
50 55 60
Ala Leu Trp Lys Ala Trp Gly Gly Asp Pro Asp Ala Ile Asn Leu Leu
65 70 75 80
Phe Gly Asn Asn Pro Pro Gly Val Glu Ala Ala Ala Glu Ser Val Gly
85 90 95
Arg Tyr Leu Cys Asp Tyr Asn Val Tyr Gln Ala Arg Val Lys Ala Lys
100 105 110
Ala Ser Leu
115

<210> 6534
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 6534
Glu Thr Ser Ser His Phe Asn Thr Phe Ser Gly Asp Ser Thr Val Arg
1 5 10 15
Pro His Pro Gln Asn Asn Asn Thr Gln Thr Gly Gln Asn Asn Asn Lys

	20		25		30										
Pro	Phe	Ser	Leu	Phe	Leu	Ser	Asn	Lys	Leu	Lys	Glu	Ala	Leu	Ile	Ile
	35						40					45			
Asn	Ile	Leu	Phe	Phe	Tyr	His	His	Ile	Pro	Pro	Thr	Glu	Ser	Leu	
	50					55					60				

<210> 6535
 <211> 80
 <212> PRT
 <213> B.fragilis

Ile	Lys	Gln	Ser	Ile	Lys	Val	Phe	Tyr	His	Gln	Ala	Thr	Thr	Tyr	Leu	
1				5					10					15		
Asn	Lys	Ile	Thr	Asp	Cys	Asn	Asn	Ser	Phe	Pro	Ala	Tyr	Phe	Pro	Cys	
			20					25					30			
Ile	Ser	Pro	Leu	Phe	His	Ile	Pro	Leu	Ser	Lys	Ile	Lys	Val	Leu	Lys	
	35					40						45				
His	Pro	Asp	Val	Ile	Tyr	Gln	Asn	Thr	Arg	Met	Phe	Tyr	Ile	Arg	Thr	
	50				55						60					
Ser	Gly	Cys	Tyr	Leu	Leu	Lys	His	Pro	Asp	Val	Phe	Arg	His	Asn	Leu	
65					70					75					80	

<210> 6536
 <211> 64
 <212> PRT
 <213> B.fragilis

Gln	Phe	Leu	Pro	Cys	Leu	Lys	Leu	Asn	Phe	Pro	Pro	Ser	Leu	Ser	Lys	
1				5				10					15			
Lys	Cys	Arg	Lys	Leu	Ala	Ser	Ser	Lys	Asn	Asn	Glu	Tyr	Ser	Gln	Phe	
			20					25					30			
Lys	Lys	Gln	Arg	Tyr	Glu	Lys	Phe	Lys	Leu	Gln	Lys	Arg	Phe	Asn	Trp	
	35					40						45				
Ser	Ser	Gly	Arg	Ala	Thr	Ser	Leu	Cys	Ile	Gln	Thr	Asn	Asn	Arg	Pro	
	50					55					60					

<210> 6537
 <211> 488
 <212> PRT
 <213> B.fragilis

Val	Tyr	Asn	Thr	Lys	Gly	Asn	Lys	Ile	Gly	Phe	Tyr	Met	Ala	Thr	Thr	
1				5				10						15		
Asp	Phe	Ile	Ala	Ala	Ile	Glu	Leu	Gly	Ser	Ser	Lys	Ile	Ala	Gly	Ile	
			20					25					30			
Ala	Gly	Lys	Lys	Asn	Ser	Asp	Gly	Ser	Ile	Gln	Val	Leu	Ala	Tyr	Ala	
	35					40						45				
Arg	Glu	Asp	Ser	Ser	Ser	Phe	Ile	Arg	Lys	Gly	Val	Ile	Tyr	Asn	Leu	
	50					55					60					
Asp	Lys	Thr	Ala	Gln	Ser	Leu	Thr	Ser	Ile	Ile	Asn	Lys	Leu	Glu	Gly	
65					70					75					80	
Ala	Leu	Asn	Asn	Ser	Ile	Ala	Lys	Ile	Tyr	Val	Gly	Ile	Gly	Gly	Gln	
				85					90					95		
Ser	Leu	Arg	Thr	Val	Arg	Asn	Val	Val	Ser	Arg	Asp	Leu	Glu	Glu	Glu	
			100					105					110			
Thr	Ile	Ile	Ser	Gln	Glu	Leu	Val	Asp	Ser	Ile	Cys	Asp	Glu	Asn	Leu	

115 120 125
 Glu Ile Pro Leu Ile Asp Met Asp Ile Leu Asp Val Ala Pro Gln Glu
 130 135 140
 Tyr Lys Ile Gly Asn Asn Leu Gln Ala Asp Pro Val Gly Val Ala Gly
 145 150 155 160
 Ser His Ile Glu Gly Arg Phe Leu Asn Ile Val Ala Arg Ala Ser Leu
 165 170 175
 Lys Lys Asn Leu Glu Arg Cys Phe Glu Gln Ala Lys Ile Glu Ile Ala
 180 185 190
 Asp Leu Leu Ile Ser Pro Leu Val Thr Ala Asp Ala Val Leu Thr Glu
 195 200 205
 Ser Glu Arg Arg Ser Gly Cys Ala Leu Ile Asp Phe Gly Ala Asp Thr
 210 215 220
 Ser Thr Ile Ser Ile Tyr Lys Asn Asn Ile Leu Arg Phe Leu Thr Val
 225 230 235 240
 Leu Pro Leu Gly Gly Asn Ser Ile Thr His Asp Leu Val Ser Leu Gln
 245 250 255
 Met Glu Glu Glu Glu Ala Glu Arg Leu Lys Ile Arg Tyr Gly Asn Ala
 260 265 270
 Phe Tyr Glu Glu Glu Glu Gly Glu Glu Pro Ala Thr Cys Gln Leu Glu
 275 280 285
 Asp Gly Asn Arg Thr Ile Glu Leu Gly Lys Leu Asn Asn Ile Ile Glu
 290 295 300
 Ala Arg Thr Glu Glu Ile Ala Asn Val Trp Asn Gln Ile Gln Leu
 305 310 315 320
 Ser Gly Tyr Asp Asp Lys Leu Leu Ala Gly Leu Ile Ile Thr Gly Gly
 325 330 335
 Ala Ala Asn Leu Lys Asp Leu Asp Glu Val Leu Arg Lys Arg Ser Lys
 340 345 350
 Ile Glu Lys Val Arg Asn Ala Arg Phe Val Arg Asn Thr Ile His Ala
 355 360 365
 Asp Glu Asp Val Val Lys Lys Asp Gly Thr Gln Asn Thr Leu Phe Gly
 370 375 380
 Leu Leu Ile Ala Gly Asn Glu Asn Cys Cys Leu Leu Glu Thr Pro Ala
 385 390 395 400
 Pro Gln Pro His Ile Gln Pro Gln Pro Gln Pro Glu Pro Val Asn Met
 405 410 415
 Phe Glu Glu Asp Glu Ser Leu Lys Glu Gln Glu Ala Ala Arg Ala
 420 425 430
 Ala Lys Lys Lys Lys Glu Glu Glu Lys Lys Arg Lys Glu Glu Glu
 435 440 445
 Lys Gln Arg Lys Leu Glu Glu Lys Lys Arg Arg Glu Glu Glu Arg Arg
 450 455 460
 Asn Lys Pro Asn Trp Phe Lys Ser Thr Phe Asp Lys Leu Ser Asn Glu
 465 470 475 480
 Ile Phe Ser Asp Glu Asp Met Lys
 485

<210> 6538

<211> 489

<212> PRT

<213> B.fragilis

<400> 6538

Lys His Cys Thr Pro Gly Phe Thr Gly Phe Cys Cys Arg Tyr Cys Lys
 1 5 10 15
 Arg Ser Tyr Lys Ile Ser Ala Thr Ile Met Asn Ile Glu Thr Ile Gln
 20 25 30
 Ser Val Tyr Phe Val Gly Ala Gly Gly Ile Gly Met Ser Ala Leu Val

35	40	45
Arg Tyr Phe Leu Ser Lys Gly Lys Val Val Ala Gly Tyr Asp Arg Thr		
50	55	60
Pro Ser Glu Leu Thr Gln His Leu Ile Glu Glu Gly Ala Gln Ile His		
65	70	75
Tyr Glu Glu Asn Ile Asp Leu Ile Pro Glu Ala Cys Lys Asp Lys Ala		
85	90	95
Thr Thr Leu Val Val Leu Thr Pro Ala Val Pro Gln Glu His Ala Glu		
100	105	110
Leu Thr Tyr Phe Arg Asp Asn Gly Phe Glu Ile Gln Lys Arg Ala Gln		
115	120	125
Val Leu Gly Thr Ile Thr Arg Ser Ser Lys Gly Leu Cys Val Ala Gly		
130	135	140
Thr His Gly Lys Thr Thr Thr Ser Thr Met Thr Ala His Leu Phe His		
145	150	155
Gln Ser His Val Gly Cys Thr Ala Phe Leu Gly Gly Ile Ser Lys Asn		
165	170	175
Tyr Gly Thr Asn Leu Leu Leu Ser Ser Thr Ser Pro Tyr Thr Val Ile		
180	185	190
Glu Ala Asp Glu Phe Asp Arg Ser Phe His Trp Leu Ser Pro Tyr Met		
195	200	205
Ser Val Ile Thr Ala Thr Asp Pro Asp His Leu Asp Ile Tyr Gly Thr		
210	215	220
Glu Gln Ala Tyr Leu Glu Ser Phe Glu His Tyr Thr Thr Leu Ile Gln		
225	230	235
Pro Gly Gly Ala Leu Ile Ile Arg Lys Gly Ile Ser Leu Gln Pro Lys		
245	250	255
Val Lys Glu Gly Val Lys Met Tyr Thr Tyr Ser Arg Asp Glu Gly Asp		
260	265	270
Phe His Ala Glu Asn Ile Arg Ile Gly Asn Gly Glu Ile Phe Ile Asp		
275	280	285
Phe Val Gly Pro Asp Ile Arg Ile Asp Asn Ile Gln Leu Gly Val Pro		
290	295	300
Val Ser Ile Asn Ile Glu Asn Gly Val Ala Ala Met Ala Leu Ala His		
305	310	315
Leu Asn Gly Val Thr Pro Glu Glu Ile Lys Gln Gly Met Ala Ser Phe		
325	330	335
Arg Gly Val Asp Arg Arg Phe Asp Phe Lys Ile Lys Asn Asn Arg Ile		
340	345	350
Val Phe Leu Ser Asp Tyr Ala His His Pro Ser Glu Ile Lys Gln Ser		
355	360	365
Val Met Ser Met Arg Glu Leu Tyr Arg Asp Lys Lys Ile Thr Ala Val		
370	375	380
Phe Gln Pro His Leu Tyr Thr Arg Thr Arg Asp Phe Tyr Lys Asp Phe		
385	390	395
Ala Asp Ser Leu Ser Leu Leu Asp Glu Val Ile Leu Val Asp Ile Tyr		
405	410	415
Pro Ala Arg Glu Gln Pro Ile Pro Gly Val Ser Ser Arg Leu Ile Tyr		
420	425	430
Asp Asn Leu Arg Pro Gly Ile Glu Lys Ser Met Cys Lys Lys Glu Glu		
435	440	445
Ile Leu Asp Val Leu Lys Ala Lys His Ile Glu Val Leu Ile Thr Leu		
450	455	460
Gly Ala Gly Asp Ile Asp Asn Tyr Val Pro Gly Ile Cys Asp Leu Leu		
465	470	475
Ser Arg Arg Met Val Pro Ser Asp Asn		
485		

<211> 254
 <212> PRT
 <213> B.fragilis

<400> 6539

Ile	Val	Lys	Thr	Ile	Asn	Phe	Leu	Met	Ile	Lys	Arg	Ile	Leu	Leu	Thr
1				5					10				15		
Ile	Val	Met	Leu	Leu	Ile	Ala	Tyr	Leu	Val	Ala	Ala	Val	Thr	Val	
			20					25				30			
Phe	Asn	Asp	Lys	Pro	Ala	His	Gln	Val	Cys	Arg	Asp	Met	Glu	Leu	Val
		35					40				45				
Ile	Lys	Asp	Thr	Leu	Asn	Ala	Gly	Phe	Val	Thr	Lys	Asn	Glu	Val	Ala
	50					55				60					
Ala	Ile	Leu	Gln	Lys	Lys	Gly	Ile	Tyr	Pro	Val	Gly	Lys	Lys	Met	Asp
65					70					75				80	
Arg	Val	His	Thr	Lys	Thr	Leu	Glu	Lys	Glu	Leu	Asp	Lys	His	Pro	Leu
				85					90					95	
Ile	Asn	Glu	Ala	Gln	Cys	Tyr	Lys	Thr	Pro	Asn	Gly	Lys	Ile	Cys	Val
			100					105					110		
Glu	Val	Thr	Gln	Arg	Val	Pro	Ile	Leu	His	Ile	Met	Ser	Ser	Asn	Gly
		115						120				125			
Glu	Asn	Tyr	Tyr	Leu	Asp	Asn	Lys	Gly	Lys	Met	Met	Pro	Pro	Asp	Ala
	130					135					140				
Lys	Cys	Val	Ala	His	Arg	Ala	Ile	Val	Thr	Gly	Asn	Val	Glu	Lys	Ser
145					150					155				160	
Phe	Ala	Met	Lys	Asp	Leu	Tyr	Lys	Phe	Gly	Val	Phe	Leu	Gln	Asn	Asn
				165					170					175	
Pro	Phe	Trp	Glu	Ala	Gln	Ile	Val	Gln	Ile	Asn	Val	Leu	Pro	Gly	Lys
			180					185					190		
Glu	Ile	Glu	Leu	Val	Pro	Arg	Val	Gly	Asn	His	Ile	Ile	Tyr	Leu	Gly
		195					200					205			
Lys	Leu	Glu	His	Phe	Glu	Asp	Lys	Leu	Lys	Arg	Leu	Lys	Thr	Phe	Tyr
	210					215					220				
Glu	Lys	Gly	Leu	Asn	Gln	Val	Gly	Trp	Asn	Lys	Tyr	Ser	Arg	Ile	Ser
225					230					235				240	
Leu	Glu	Phe	Gly	Asn	Gln	Ile	Ile	Cys	Thr	Lys	Lys	Lys	Gln		
				245					250						

<210> 6540
 <211> 669
 <212> PRT
 <213> B.fragilis

<400> 6540

Leu	Arg	Tyr	Phe	His	Tyr	Ile	Cys	Ser	Val	Ile	Ile	Ile	Arg	Asn	Gln
1				5					10					15	
Ile	Met	Ser	Glu	Glu	Gln	Asn	Pro	Thr	Asn	Asn	Gly	Ser	Tyr	Ser	Ala
			20					25				30			
Asp	Ser	Ile	Gln	Val	Leu	Glu	Gly	Leu	Glu	Ala	Val	Arg	Lys	Arg	Pro
		35					40					45			
Ala	Met	Tyr	Ile	Gly	Asp	Ile	Ser	Val	Lys	Gly	Leu	His	His	Leu	Val
	50					55				60					
Tyr	Glu	Ile	Val	Asp	Asn	Ser	Ile	Asp	Glu	Ala	Leu	Ala	Gly	Tyr	Cys
65					70					75				80	
Asp	His	Ile	Glu	Val	Thr	Ile	Asn	Glu	Asp	Asn	Ser	Ile	Thr	Val	Gln
				85					90					95	
Asp	Asn	Gly	Arg	Gly	Ile	Pro	Val	Asp	Phe	His	Glu	Lys	Glu	Gln	Lys
			100					105					110		
Ser	Ala	Leu	Glu	Val	Ala	Met	Thr	Val	Leu	His	Ala	Gly	Gly	Lys	Phe

115	120	125
Asp Lys Gly Ser Tyr Lys Val Ser Gly Gly Leu His Gly Val Gly Met		
130	135	140
Ser Cys Val Asn Ala Leu Ser Thr His Met Thr Thr Gln Val Phe Arg		
145	150	155
Asn Gly Lys Ile Tyr Gln Gln Glu Tyr Glu Ile Gly Lys Pro Leu Tyr		
165	170	175
Pro Val Lys Glu Val Gly Ile Ala Asp His Thr Gly Thr Lys Gln Gln		
180	185	190
Phe Trp Pro Asp Asp Ser Ile Phe Thr Glu Thr Ile Tyr Asp Tyr Lys		
195	200	205
Ile Leu Ala Ser Arg Leu Arg Glu Leu Ala Tyr Leu Asn Ala Gly Leu		
210	215	220
Arg Ile Ser Leu Thr Asp Arg Arg Val Val Asn Glu Asp Gly Ser Phe		
225	230	235
Lys His Glu Thr Phe Tyr Ser Glu Glu Gly Leu Arg Glu Phe Val Arg		
245	250	255
Phe Ile Glu Ser Ser Arg Glu His Leu Ile Asn Asp Val Ile Tyr Leu		
260	265	270
Asn Thr Glu Lys Gln Asn Ile Pro Ile Glu Val Ala Ile Met Tyr Asn		
275	280	285
Thr Gly Phe Ser Glu Asn Ile His Ser Tyr Val Asn Asn Ile Asn Thr		
290	295	300
Ile Glu Gly Gly Thr His Leu Ala Gly Phe Arg Arg Ala Leu Thr Arg		
305	310	315
Thr Leu Lys Lys Tyr Ala Glu Asp Ser Lys Met Leu Glu Lys Val Lys		
325	330	335
Val Glu Ile Ser Gly Asp Asp Phe Arg Glu Gly Leu Thr Ala Val Ile		
340	345	350
Ser Val Lys Val Ala Glu Pro Gln Phe Glu Gly Gln Thr Lys Thr Lys		
355	360	365
Leu Gly Asn Asn Glu Val Met Gly Ala Val Asp Gln Ala Val Gly Glu		
370	375	380
Val Leu Asn Tyr Tyr Leu Glu Glu His Pro Lys Glu Ala Lys Ala Ile		
385	390	395
Val Asp Lys Val Ile Leu Ala Ala Thr Ala Arg His Ala Ala Arg Lys		
405	410	415
Ala Arg Glu Met Val Gln Arg Lys Ser Pro Met Ser Gly Gly Gly Leu		
420	425	430
Pro Gly Lys Leu Ala Asp Cys Ser Asp Lys Asp Pro Gln Lys Cys Glu		
435	440	445
Leu Phe Leu Val Glu Gly Asp Ser Ala Gly Gly Thr Ala Lys Gln Gly		
450	455	460
Arg Asn Arg Ala Phe Gln Ala Ile Leu Pro Leu Arg Gly Lys Ile Leu		
465	470	475
Asn Val Glu Lys Ala Met Tyr His Lys Ala Leu Glu Ser Glu Glu Ile		
485	490	495
Arg Asn Ile Tyr Thr Ala Leu Gly Val Thr Ile Gly Thr Glu Glu Asp		
500	505	510
Ser Lys Ala Ala Asn Ile Asp Lys Leu Arg Tyr His Lys Ile Ile Ile		
515	520	525
Met Thr Asp Ala Asp Val Asp Gly Ser His Ile Asp Thr Leu Ile Met		
530	535	540
Thr Phe Phe Phe Arg Tyr Met Pro Gln Ile Ile Gln Asn Gly Tyr Leu		
545	550	555
Tyr Ile Ala Thr Pro Pro Leu Tyr Leu Cys Lys Lys Gly Lys Ile Glu		
565	570	575
Glu Tyr Cys Trp Thr Asp Ala Gln Arg Gln Lys Phe Ile Asp Thr Tyr		
580	585	590

115 120 125
 130 135 140
 145 150 155
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555
 565 570 575
 580 585 590

Gly Gly Gly Ser Glu Asn Ala Ile His Thr Gln Arg Tyr Lys Gly Leu
 595 600 605
 Gly Glu Met Asn Ala Gln Gln Leu Trp Glu Thr Thr Met Asp Pro Glu
 610 615 620
 Asn Arg Met Leu Lys Gln Val Asn Ile Asp Asn Ala Ala Glu Ala Asp
 625 630 635 640
 Tyr Ile Phe Ser Met Leu Met Gly Glu Asp Val Gly Pro Arg Arg Glu
 645 650 655
 Phe Ile Glu Glu Asn Ala Thr Tyr Ala Asn Ile Asp Ala
 660 665

<210> 6541
 <211> 435
 <212> PRT
 <213> B.fragilis

<400> 6541

Lys Leu Lys Ala Val Asp Leu Leu Lys Asn Ile Phe Lys Gly Asp Lys
 1 5 10 15
 Val Ile Trp Ile Ile Phe Leu Cys Leu Cys Leu Ile Ser Ile Ile Glu
 20 25 30
 Val Phe Ser Ala Ala Ser Thr Leu Thr Tyr Lys Ser Gly Asp His Trp
 35 40 45
 Gly Pro Ile Thr Gln His Ser Ile Ile Leu Met Val Gly Ala Val Val
 50 55 60
 Val Val Leu Met His Asn Ile Pro Tyr Lys Trp Phe Gln Val Phe Pro
 65 70 75 80
 Val Phe Leu Tyr Pro Ile Ser Val Val Leu Leu Ala Phe Val Thr Leu
 85 90 95
 Met Gly Val Ile Thr Gly Asp Arg Val Asn Gly Ala Ala Arg Trp Met
 100 105 110
 Ser Phe Met Gly Leu Gln Phe Gln Pro Ser Glu Leu Ala Lys Met Ala
 115 120 125
 Val Ile Ile Ala Val Ser Phe Ile Leu Ser Lys Lys Gln Asp Asp Glu
 130 135 140
 Gly Ala Asn Pro Lys Ala Phe Lys Tyr Ile Met Ile Leu Thr Gly Leu
 145 150 155 160
 Val Cys Met Leu Ile Ala Pro Glu Asn Leu Ser Thr Ala Met Leu Leu
 165 170 175
 Phe Gly Val Val Val Leu Met Met Phe Ile Gly Arg Val Ala Phe Lys
 180 185 190
 Lys Leu Ala Met Leu Leu Gly Gly Leu Ala Leu Val Gly Cys Leu Gly
 195 200 205
 Ala Val Phe Leu Leu Ala Ile Pro Lys Asp Thr Asp Ile Pro Phe Leu
 210 215 220
 His Arg Phe Asp Thr Trp Lys Ser Arg Ile Thr Asn Phe Thr Glu Lys
 225 230 235 240
 Glu Glu Val Pro Ala Ala Lys Phe Asp Ile Asp Lys Asp Ala Gln Ile
 245 250 255
 Ala His Ala Arg Ile Ala Ile Ala Thr Ser Asn Val Ile Gly Lys Ala
 260 265 270
 Pro Gly Asn Ser Ile Gln Arg Asp Phe Leu Ser Gln Ala Phe Ser Asp
 275 280 285
 Phe Ile Phe Ala Ile Ile Ile Glu Glu Leu Gly Leu Val Gly Gly Ala
 290 295 300
 Phe Val Val Ile Leu Tyr Ile Trp Leu Leu Val Arg Thr Gly Arg Ile
 305 310 315 320
 Ala Gln Lys Cys Glu Arg Thr Phe Pro Ala Phe Leu Val Met Gly Ile
 325 330 335

Ala Leu Met Leu Val Ser Gln Ala Ile Leu Asn Met Met Val Ala Val
 340 345 350
 Gly Leu Phe Pro Val Thr Gly Gln Pro Leu Pro Leu Ile Ser Lys Gly
 355 360 365
 Gly Thr Ser Thr Leu Ile Asn Cys Ala Tyr Ile Gly Met Ile Leu Ser
 370 375 380
 Val Ser Arg Tyr Thr Ala Tyr Leu Glu Glu Lys Lys Glu Asn Pro Ala
 385 390 395 400
 Pro Leu Leu Thr Gln Ser Glu Gly Asn Glu Ala Ile Ala Ser Glu Ala
 405 410 415
 Gln Thr Ala Ala Glu Pro Thr Ala Glu Val Leu Asn Ser Asp Ala Lys
 420 425 430
 Phe Glu Glu
 435

<210> 6542

<211> 135

<212> PRT

<213> B.fragilis

<400> 6542

Lys Arg Leu Ala Arg Val Arg Gly Ile Asp Phe Ile His Asp Ser Lys
 1 5 10 15
 Ala Pro Asn Val Asn Ser Cys Trp Tyr Ala Leu Gln Ser Met Thr Thr
 20 25 30
 Lys Thr Val Leu Ile Leu Gly Gly Lys Asp Lys Gly Asn Asp Tyr Thr
 35 40 45
 Glu Ile Glu Glu Leu Val Arg Glu Lys Cys Ser Ala Leu Val Tyr Leu
 50 55 60
 Gly Leu His Asn Glu Lys Leu His Glu Phe Phe Asp Arg Leu Gly Leu
 65 70 75 80
 Pro Val Ala Glu Val Gln Thr Gly Met Lys Asp Ala Val Glu Ala Ala
 85 90 95
 Tyr Lys Leu Ala Lys Lys Gly Glu Thr Val Leu Leu Ser Pro Cys Cys
 100 105 110
 Ala Ser Phe Asp Leu Phe Lys Ser Tyr Glu Asp Arg Gly Glu Gln Phe
 115 120 125
 Lys Lys Tyr Val Arg Glu Leu
 130 135

<210> 6543

<211> 66

<212> PRT

<213> B.fragilis

<400> 6543

Val Gly His Leu His Gln Gln Ala Cys Leu Arg Asn Lys Ile Tyr Asn
 1 5 10 15
 Arg Leu Tyr Ile Ile Leu Glu Ala Gly Leu Phe Ser Ser Ala Phe Tyr
 20 25 30
 Ala Phe Asn Tyr Pro Val Gly Phe Ile Phe Asn Ser Ser Phe Phe Thr
 35 40 45
 Leu His Ser Ser Leu Thr Gln Ile Phe Ser Leu Tyr Leu Leu Cys Tyr
 50 55 60
 Tyr Asn
 65

<210> 6544

<211> 181

<212> PRT
 <213> B.fragilis

<400> 6544

Gln Trp Ser Tyr His Ile Leu Ile Lys Val Lys Tyr Arg Ile Ile Asn
 1 5 10 15
 Pro Asp Leu Pro Ile Val Asn Arg Lys Ser Leu Asn His Asn Asn Ile
 20 25 30
 Met Asp Leu Phe Glu Arg Val Ser Glu Asp Ile Lys Asn Ala Met Lys
 35 40 45
 Ala Lys Asp Lys Val Ala Leu Glu Thr Leu Arg Asn Val Lys Lys Phe
 50 55 60
 Phe Leu Glu Ala Lys Thr Ala Pro Gly Ala Asn Asp Thr Leu Thr Asp
 65 70 75 80
 Ala Asp Ala Leu Lys Ile Val Gln Lys Leu Val Lys Gln Gly Lys Asp
 85 90 95
 Ala Ala Glu Ile Tyr Ile Gly Gln Gly Arg Gln Asp Leu Ala Asp Ala
 100 105 110
 Glu Leu Ala Gln Val Gln Val Met Glu Thr Tyr Leu Pro Lys Gln Met
 115 120 125
 Ser Ala Glu Glu Leu Glu Ala Ala Leu Lys Glu Ile Ile Ala Glu Val
 130 135 140
 Gly Ala Thr Ser Gly Lys Asp Met Gly Lys Val Met Gly Val Ala Ser
 145 150 155 160
 Lys Lys Leu Ala Gly Leu Ala Glu Gly Arg Ala Ile Ser Ala Lys Val
 165 170 175
 Lys Glu Leu Leu Gly
 180

<210> 6545
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 6545

Arg Thr Ser Tyr Thr Arg Tyr Phe Lys Ala Met Cys Gln Ser Val Val
 1 5 10 15
 Asn Lys Asn Thr Ala Arg Lys Gly Lys Asn Leu Gly Phe Val Leu Lys
 20 25 30
 Pro Ser Glu Arg Gly Gly Glu Asp Lys Ala Val Ile Val Pro Leu Lys
 35 40 45
 Leu Arg Thr Val Phe Leu Thr Leu Phe Val Lys Leu Phe His Ala Glu
 50 55 60
 Thr Leu Ser
 65

<210> 6546
 <211> 343
 <212> PRT
 <213> B.fragilis

<400> 6546

Asp Arg Asn Leu Gly Glu Arg Thr Cys Gly Glu Thr Leu Tyr Gly Thr
 1 5 10 15
 Arg Ser Ile Arg Ser Ser Leu Gly Arg Asp Tyr Glu Arg Arg Thr Glu
 20 25 30
 Asn Asn Glu Gln Arg Ala Lys Met Lys Glu Glu Glu Thr Thr Tyr His
 35 40 45
 Val Pro Val Leu Leu Lys Glu Ser Val Asp Ala Met Asn Ile Ser Pro

50	55	60
Asp Gly Thr Tyr Val	Asp Val Thr Phe Gly	Gly Gly His Ser Arg
65	70	75
Glu Ile Leu Ser Arg	Leu Gly Asp Gly	Arg Leu Leu Gly Phe Asp
85	90	95
Gln Asp Glu Asp Ala	Glu Arg Asn Ile Val	Asn Asp Pro His Phe Thr
100	105	110
Phe Val Arg Ser Asn	Phe Arg Tyr Leu His	Asn Phe Leu Arg Tyr His
115	120	125
Asp Ile Gly Glu Val	Asp Ala Ile Leu Ala	Asp Leu Gly Val Ser Ser
130	135	140
His His Phe Asp Asp	Ser Glu Arg Gly Phe	Ser Phe Arg Phe Asp Gly
145	150	155
Lys Leu Asp Met Arg	Met Asn Lys Arg Ala	Gly Ile Thr Ala Ala Asp
165	170	175
Val Val Asn Thr Tyr	Glu Glu Glu Arg Leu	Ala Asp Ile Phe Tyr Leu
180	185	190
Tyr Gly Glu Leu Lys	Asn Ser Arg Lys Leu	Ala Ser Val Ile Val Lys
195	200	205
Ala Arg Thr Gly Gln	Lys Ile Glu Thr Ile	Gly Glu Phe Leu Glu Ile
210	215	220
Ile Lys Pro Leu Phe	Gly Arg Glu Arg Glu	Lys Lys Glu Leu Ala Lys
225	230	235
Val Phe Gln Ala Leu	Arg Ile Glu Val Asn	Gln Glu Met Glu Ala Leu
245	250	255
Lys Glu Met Leu Met	Ala Ala Thr Glu Ala	Leu Lys Pro Gly Gly Arg
260	265	270
Leu Val Val Ile Thr	Tyr His Ser Leu Glu	Asp Arg Met Val Lys Asn
275	280	285
Ile Met Lys Thr Gly	Asn Val Glu Gly Lys	Ala Thr Gln Asp Phe Phe
290	295	300
Gly Asn Leu Gln Thr	Pro Phe Arg Leu Val	Asn Asn Lys Val Ile Val
305	310	315
Pro Asp Glu Asp Glu	Ile Thr Arg Asn Pro	Arg Ser Arg Ser Ala Lys
325	330	335
Leu Arg Ile Ala Glu	Lys Lys	
340		

<210> 6547

<211> 180

<212> PRT

<213> B.fragilis

<400> 6547

Ser Gln Asn Leu Ile	Ile Ile Asn Gly	Phe Gly Lys Asp	Thr Val Ile
1	5	10	15
Gly Pro Glu Leu Leu	Phe Gly Ser Cys	Val Val Arg Tyr	Ser Tyr Phe
20	25	30	
Phe Asn Gly Ile Lys	Arg Phe Thr Asp	Phe Ile Phe Leu	Leu Ile Asp
35	40	45	
Phe Thr Val Ala Glu	Tyr Leu Gly Ser	His Val Cys Arg	Gln Cys Ile
50	55	60	
His Thr Gly His Thr	Tyr Thr Val Lys	Thr Ser Gly Tyr	Phe Val Arg
65	70	75	80
Thr Phe Ile Glu Leu	Thr Ser Gly Met	Gln Tyr Gly His	Gly Asn Phe
85	90	95	
Glu Gly Arg Phe Leu	Leu Phe Phe Val	Glu Ile Tyr Arg	Asn Thr Thr
100	105	110	
Ser Ile Ile Leu Tyr	Gly Asp Arg Val	Val Phe Val Asp	Ser Tyr Phe

115	120	125
Asp Met Val Ala Ile Thr Gly Gln Cys Phe Val Asp Arg Val Val Asp		
130	135	140
Asn Phe Ile Tyr Gln Val Met Lys Ser Leu Tyr Ala Asp Val Thr Asn		
145	150	155
Val His Arg Arg Ala Phe Ser Asn Cys Phe Lys Ser Phe Gln Tyr Leu		
165	170	175
Asp Thr Ile Cys		
180		

<210> 6548

<211> 442

<212> PRT

<213> B.fragilis

<400> 6548

Phe Ile Ile Gln Tyr Asn Met Asp Glu Ile Val Gln Phe Asp Phe Pro		
1	5	10
Thr Asp Ser Pro Lys Ile Ile Lys Val Ile Gly Val Gly Gly Gly Gly		
20	25	30
Gly Asn Ala Val Asn His Met Tyr Arg Glu Gly Ile His Asp Val Thr		
35	40	45
Phe Val Leu Cys Asn Thr Asp Asn Gln Ala Leu Ala Glu Ser Pro Val		
50	55	60
Pro Val Lys Leu Gln Leu Gly Arg Ser Ile Thr Gln Gly Leu Gly Ala		
65	70	75
Gly Asn Arg Pro Glu Arg Ala Arg Asp Ala Ala Glu Glu Ser Ile Glu		
85	90	95
Asp Ile Lys Thr Leu Leu Asn Asp Gly Thr Lys Met Val Phe Ile Thr		
100	105	110
Ala Gly Met Gly Gly Gly Thr Gly Thr Gly Ala Ala Pro Val Ile Ala		
115	120	125
Arg Ile Ala Lys Glu Met Asp Ile Leu Thr Val Gly Ile Val Thr Ile		
130	135	140
Pro Phe Ile Phe Glu Gly Glu Lys Lys Ile Ile Gln Ala Leu Asp Gly		
145	150	155
Val Glu Arg Ile Ala Gln His Val Asp Ala Leu Leu Val Ile Asn Asn		
165	170	175
Glu Arg Leu Arg Glu Ile Tyr Ser Asp Leu Thr Phe Met Asn Ala Phe		
180	185	190
Gly Lys Ala Asp Asp Thr Leu Ser Ile Ala Ala Lys Ser Ile Ala Glu		
195	200	205
Ile Ile Thr Met Arg Gly Thr Val Asn Leu Asp Phe Ala Asp Val Lys		
210	215	220
Thr Ile Leu Lys Asp Gly Gly Val Ala Ile Met Ser Thr Gly Phe Gly		
225	230	235
Glu Gly Glu Asn Arg Val Thr Lys Ala Ile Asp Asp Ala Leu His Ser		
245	250	255
Pro Leu Leu Asn Asn Asn Asp Ile Phe Asn Ala Lys Lys Val Met Leu		
260	265	270
Asn Val Ser Phe Cys Pro Ala Ser Glu Leu Met Met Glu Glu Met Asn		
275	280	285
Glu Val His Glu Phe Met Ser Lys Phe Arg Glu Gly Val Glu Val Ile		
290	295	300
Trp Gly Val Ala Met Asp Asn Ser Leu Asp Thr Lys Val Lys Ile Thr		
305	310	315
Val Leu Ala Thr Gly Phe Gly Val Glu Asp Val Pro Gly Met Asp Asp		
325	330	335
Leu His Glu Lys Arg Ser Gln Glu Glu Glu Glu Arg Gln Leu Gln Leu		

			340					345					350				
Glu	Glu	Glu	Lys	Glu	Lys	Asn	Lys	Glu	Arg	Ile	Arg	Lys	Ala	Tyr	Gly		
			355					360					365				
Glu	Ser	Ala	Ser	Gly	Ile	Gly	Thr	Arg	Asn	Leu	Arg	Lys	Arg	Arg	His		
			370					375					380				
Ile	Tyr	Leu	Phe	Asn	Ala	Glu	Asp	Leu	Asp	Asn	Asp	Asp	Ile	Ile	Ala		
			385					390					395			400	
Met	Val	Glu	Asp	Ser	Pro	Thr	Tyr	Leu	Arg	Asp	Lys	Thr	Thr	Leu	Gly		
				405						410					415		
Lys	Ile	Lys	Ala	Lys	Ala	Ala	Leu	Glu	Glu	Glu	Ile	Ala	Thr	Glu	Glu		
			420					425					430				
Ala	Ile	Asp	Asp	Ser	Gly	Val	Ile	Thr	Phe								
			435					440									

<210> 6549
 <211> 171
 <212> PRT
 <213> B.fragilis

Lys	Phe	Ile	Lys	Met	Lys	Thr	Lys	Asn	Tyr	Leu	Ser	Ile	Ile	Ser	Ile		
1			5					10					15				
Leu	Phe	Phe	Ser	Phe	Leu	Phe	Val	Ser	Cys	Ser	Lys	Glu	Asp	Glu	Gly		
			20					25					30				
Asp	Thr	Ile	Lys	Pro	Val	Ile	Asp	Leu	Leu	Glu	Pro	Glu	Glu	Gly	Ala		
			35					40				45					
Ile	Leu	Arg	Ile	Gly	Ser	Ser	His	Gly	Val	His	Phe	Glu	Met	Asn	Leu		
			50				55				60						
His	Asp	Asn	Glu	Ala	Ile	Ala	Ser	Tyr	Lys	Ile	Asn	Ile	His	Asn	Asn		
			65			70				75				80			
Phe	Asp	Gly	His	Ser	His	Thr	Arg	Ala	Ser	Glu	Ala	Gly	Val	Thr	Lys		
			85					90						95			
Pro	Phe	Thr	Phe	Glu	Arg	Thr	Tyr	Thr	Asp	Lys	Ala	Gly	Gln	Lys	Asp		
			100					105					110				
Ala	His	Val	His	Asn	His	Asp	Ile	Lys	Ile	Pro	Ala	Asp	Ala	Thr	Pro		
			115				120					125					
Gly	Asn	Tyr	His	Leu	Met	Val	Tyr	Cys	Leu	Asp	Gln	Ser	Gly	Asn	Glu		
			130				135				140						
Thr	Tyr	Val	Val	Arg	Asn	Ile	Val	Leu	Ser	Val	Glu	Gly	Gly	Glu	Glu		
			145			150				155					160		
Gly	Glu	His	His	His	Asp	Glu	His	His	His	Asp							
			165					170									

<210> 6550
 <211> 328
 <212> PRT
 <213> B.fragilis

Arg	Leu	Asp	Asn	Arg	Ser	Asp	Glu	Gln	Gln	Ala	Met	Ser	Tyr	Lys	Cys		
1			5					10					15				
Leu	Pro	Leu	Ile	Thr	Lys	Tyr	Glu	Pro	Lys	Thr	Cys	Ser	Ile	Lys	Lys		
			20					25					30				
Lys	Ile	Tyr	Arg	Arg	Ile	Asp	Lys	Phe	Arg	Leu	Ile	Asn	Arg	Asn	Leu		
			35				40					45					
Lys	Ile	Met	Lys	Arg	Ile	Val	Val	Leu	Gly	Ala	Gly	Glu	Ser	Gly	Ala		
			50				55				60						
Gly	Ala	Ala	Val	Leu	Ala	Lys	Val	Lys	Gly	Phe	Asp	Thr	Phe	Val	Ser		
			65			70				75					80		

Asp Met Ser Ala Ile Lys Asp Lys Tyr Lys Thr Leu Leu Asp Gly His
 85 90 95
 Gly Ile Ala Trp Glu Glu Gly Arg His Thr Glu Glu Gln Ile Leu Asn
 100 105 110
 Ala Asp Glu Val Val Lys Ser Pro Gly Ile Pro Asn Asp Ala Pro Leu
 115 120 125
 Ile Leu Lys Leu Arg Glu Gln Gly Thr Pro Ile Ile Ser Glu Ile Glu
 130 135 140
 Phe Ala Gly Arg Tyr Thr Asp Ala Lys Met Ile Cys Ile Thr Gly Ser
 145 150 155 160
 Asn Gly Lys Thr Thr Thr Thr Ser Leu Ile Tyr His Ile Phe Lys Ser
 165 170 175
 Ala Gly Leu Asn Val Gly Leu Ala Gly Asn Ile Gly Lys Ser Leu Ala
 180 185 190
 Leu Gln Val Ala Glu Glu Lys His Asp Tyr Tyr Val Ile Glu Leu Ser
 195 200 205
 Ser Phe Gln Leu Asp Asn Met Tyr Asn Phe Arg Ala Asp Ile Ala Val
 210 215 220
 Leu Met Asn Ile Thr Pro Asp His Leu Asp Arg Tyr Asp His Cys Met
 225 230 235 240
 Gln Asn Tyr Ile Asn Ala Lys Phe Arg Ile Thr Gln Asn Gln Thr Ser
 245 250 255
 Glu Asp Ala Phe Ile Phe Trp Asn Asp Asp Pro Ile Ile Lys Arg Glu
 260 265 270
 Leu Asp Lys His Gly Ile Arg Ala His Leu Tyr Pro Phe Leu Gly Ile
 275 280 285
 Lys Glu Glu Arg Ser Ile Ala Tyr Val Glu Asp His Glu Val Val Ile
 290 295 300
 Thr Asp Pro Ile Ala Ile Asn Met Glu Gln Glu Gln Val Ala Leu Thr
 305 310 315 320
 Gly Gln His Asn Leu Ile Thr Leu
 325

<210> 6551

<211> 452

<212> PRT

<213> B.fragilis

<400> 6551

Ile Met Cys Lys Tyr Gln Ile Val Lys Ile Met Met Asp Trp Lys Arg
 1 5 10 15
 Leu Ile Ser Ala Lys Arg Phe Gly Met Glu Glu Phe His Glu Glu Arg
 20 25 30
 Gln Glu Asn Arg Ser Glu Phe Gln Arg Asp Tyr Asp Arg Leu Val Phe
 35 40 45
 Ser Ala Pro Phe Arg Arg Leu Gln Asn Lys Thr Gln Val Phe Pro Leu
 50 55 60
 Pro Gly Ser Ile Phe Val His Asn Arg Leu Thr His Ser Leu Glu Val
 65 70 75 80
 Ser Cys Val Gly Arg Ser Leu Gly Asn Asp Val Ser Lys Ala Ile Leu
 85 90 95
 Ala Arg Gln Pro Glu Leu Gln Asp Ser Phe Leu Pro Glu Ile Gly Ser
 100 105 110
 Ile Val Ser Ala Ala Cys Leu Ala His Asp Leu Gly Asn Pro Pro Phe
 115 120 125
 Gly His Ser Gly Glu Lys Ala Ile Ser Thr Phe Phe Ser Glu Gly Lys
 130 135 140
 Gly Val Gln Leu Gln Glu Lys Leu Ser Pro Met Glu Trp Asn Asp Leu
 145 150 155 160

Thr His Phe Glu Gly Asn Ala Asn Ala Phe Arg Leu Leu Thr His Gln
 165 170 175
 Phe Glu Gly Arg Arg Lys Gly Gly Phe Val Leu Thr Tyr Ser Thr Leu
 180 185 190
 Ala Ser Ile Val Lys Tyr Pro Phe Ser Ser Ser Leu Ala Gly Asn Lys
 195 200 205
 Ser Lys Phe Gly Phe Phe Thr Thr Glu Glu Glu Gly Phe Arg Arg Ile
 210 215 220
 Ala Thr Glu Leu Gly Leu Ile Gln Leu Ser Asp Arg Pro Leu Lys Tyr
 225 230 235 240
 Ala Arg His Pro Leu Val Tyr Leu Val Glu Ala Ala Asp Asp Ile Cys
 245 250 255
 Tyr Gln Met Met Asp Ile Glu Asp Ala His Lys Leu Lys Ile Leu Thr
 260 265 270
 Thr Glu Glu Thr Lys Glu Leu Leu Leu Ala Tyr Phe Ala Asp Glu Arg
 275 280 285
 Gln Thr His Ile Arg Lys Thr Phe Asp Ile Val Lys Asp Thr Asn Glu
 290 295 300
 Gln Ile Ala Tyr Leu Arg Ser Ser Val Ile Gly Leu Leu Ile Lys Glu
 305 310 315 320
 Cys Thr Gln Val Phe Leu Asn Asn Glu Thr Glu Ile Leu Ser Gly Thr
 325 330 335
 Phe Glu Gly Ala Leu Ile Lys His Ile Ser Glu Arg Pro Gly Lys Ala
 340 345 350
 Tyr Lys His Cys Ser Glu Val Ser Phe Ser Lys Ile Tyr Arg Ser Arg
 355 360 365
 Asp Val Leu Asp Ile Glu Leu Ala Gly Phe Arg Val Ile Asn Thr Leu
 370 375 380
 Leu Glu Leu Met Ile Asp Ala Val Thr Ser Pro Glu Lys Ala Tyr Ser
 385 390 395 400
 Gln Leu Leu Ile Asn Arg Val Ser Gly Gln Tyr Asn Ile Lys Ala Pro
 405 410 415
 Ala Leu Tyr Glu Arg Val Gln Ala Val Leu Asp Tyr Ile Ser Gly Met
 420 425 430
 Thr Asp Val Phe Ala Leu Asp Leu Tyr Arg Lys Ile Asn Gly Asn Ser
 435 440 445
 Leu Pro Ala Val
 450

<210> 6552

<211> 61

<212> PRT

<213> B.fragilis

<400> 6552

Phe Gln Lys Lys Pro Tyr Leu Cys Thr Arg Asn Arg Glu Thr Thr Ile
 1 5 10 15
 Gln Asn Glu Ser Lys Val Lys Gln Lys Glu Gln Lys Cys Ser Lys Gln
 20 25 30
 Asp Gly Pro Phe Val Tyr Arg Leu Gly Arg Lys Ile Phe Ile Leu Glu
 35 40 45
 Arg Gly Val Arg Phe Pro His Gly Leu Gln Leu Lys Lys
 50 55 60

<210> 6553

<211> 208

<212> PRT

<213> B.fragilis

Met	Lys	Lys	Lys	Tyr	Leu	Val	Ile	Val	Leu	Leu	Phe	Leu	Val	Ala	Asn
1				5					10					15	
Thr	Cys	Tyr	Ile	Tyr	His	Gln	His	Val	Gly	Leu	Lys	Lys	Val	His	Ser
			20					25					30		
Phe	Leu	Ser	Glu	Leu	Arg	Gln	Asp	Thr	Gly	Glu	Arg	Leu	Gly	Ile	Leu
		35				40						45			
Glu	Met	Gln	Lys	Glu	Asp	Arg	Val	Tyr	Glu	Ile	Gln	Phe	Asn	Gly	Gln
	50				55					60					
Leu	Ile	Asp	Lys	Glu	Leu	Thr	Val	Ile	Asp	Thr	Asp	Gly	Lys	Gln	Lys
65					70				75					80	
Lys	Ile	Gly	Asp	Leu	Ile	Ile	Asp	Asn	Pro	Lys	Leu	Val	Phe	Arg	Phe
			85					90					95		
Ser	Glu	Leu	Asn	Cys	Asp	Lys	Cys	Ile	Asp	Ala	Gln	Ile	Arg	Asn	Leu
			100					105					110		
Asn	Glu	Tyr	Val	Asp	Ser	Ile	Glu	Leu	Gln	Asn	Ile	Ile	Leu	Leu	Thr
		115					120					125			
Asp	Phe	Gln	Ser	Leu	Glu	Tyr	Met	Arg	Ser	Phe	Gln	Lys	Ser	Asn	Lys
	130					135					140				
Val	Lys	Phe	Ala	Ile	Tyr	Asn	Met	Glu	Ala	Glu	Ile	Asp	Ser	Val	Leu
145					150				155					160	
Val	Asn	Ile	Asp	Leu	Pro	Tyr	Phe	Phe	Val	Leu	Thr	Pro	Gln	Glu	Glu
			165					170						175	
Arg	Ile	Gln	Cys	Met	Tyr	Ile	Pro	His	Lys	Glu	Ile	Pro	Phe	Leu	Thr
		180						185					190		
Glu	Val	Tyr	Leu	Ser	Ser	Val	Lys	Arg	Lys	Phe	Phe	Thr	Asp	Leu	Glu
		195					200					205			

<211> 140

<212> PRT

<213> B.fragilis

Gly	Trp	Cys	Leu	Tyr	Tyr	Glu	Leu	Cys	Ile	Asp	Ile	Cys	Ile	Arg	Cys
1				5					10					15	
Ile	Leu	Phe	Asn	Glu	Leu	Ala	Ala	Trp	Thr	Tyr	Val	Phe	Thr	His	Gln
			20					25					30		
His	Gly	Glu	Asp	Ile	Val	Gly	Phe	Cys	Cys	Val	Val	Asp	Ile	Asn	Leu
		35					40					45			
Phe	Gln	His	Thr	Val	Phe	Arg	Ile	His	Ser	Arg	Phe	Pro	Gln	Leu	Leu
	50					55					60				
Gly	Ile	His	Leu	Thr	Gln	Thr	Phe	Val	Ala	Leu	Cys	Met	Asp	Cys	Ile
65					70				75					80	
Phe	Arg	Thr	Ala	Thr	Ile	Ser	Val	Asp	Lys	Leu	Leu	Ala	Leu	Arg	Ile
				85				90						95	
Cys	Pro	Ala	Ile	Leu	Phe	Tyr	Phe	Ser	Phe	Phe	Ala	Lys	Val	Glu	Arg
		100						105					110		
Gly	Ser	Gly	Asn	Val	Gln	Ile	Ala	Ile	Leu	Asp	Asp	Leu	Trp	His	Ile
		115					120					125			
Ala	Glu	Glu	Lys	Ser	His	Asp	Gln	Cys	Val	Asp	Val				
	130					135					140				

<210> 6555

<211> 113

<212> PRT

<213> B.fragilis

<400> 6555

Met Gly Val Lys Arg Asn Thr Arg His Arg Ile Trp Leu Ala Trp Met
 1 5 10 15
 Leu Leu Met Thr Phe Met Pro Leu Ser Val Val Lys Val Phe His Asn
 20 25 30
 His Ser Glu Glu Thr Ser Ile Thr Cys Thr Asp Ala His Ser Gly Lys
 35 40 45
 Ser His His Thr Cys Glu Thr Cys Pro Ile Cys Gln Phe Met Leu Ser
 50 55 60
 Pro Phe Ile Glu Thr Pro Ser Thr Leu Leu Thr Tyr Thr Pro Leu Tyr
 65 70 75 80
 Val Lys Trp Glu Ser Gly Thr Phe Gln Asp Lys Lys Leu Ser Ile Ala
 85 90 95
 Phe Tyr Pro His Tyr Leu Arg Gly Pro Pro Pro Val Phe Tyr His Ile
 100 105 110
 Val

<210> 6556

<211> 880

<212> PRT

<213> B.fragilis

<400> 6556

His Thr Val Asp Pro Ser Ser Pro Val Val Lys Thr His Asn Leu Ser
 1 5 10 15
 Leu Glu Glu Val Ala Val Tyr Ala Tyr Arg Asn Lys Ala Gly Lys Ala
 20 25 30
 Asn Trp Glu Val Thr Arg Ala Ser Ala Asp Thr Ile Pro Ala Asp Thr
 35 40 45
 Ala Ser Thr Asp Phe Asn Ser Glu Ile Asp Ile Arg Asn Ile Glu Leu
 50 55 60
 Lys His Ala Asn Leu Val Phe Asp Asp Arg Asn Thr Asp Ile Tyr Ser
 65 70 75 80
 Arg Ile Asp Asp Ala Asn Leu Lys Leu Arg Leu Ser Leu Thr Lys Gly
 85 90 95
 Ile Ser Thr Leu Gly Leu Lys Phe Asp Asn Lys Asn Ile Leu Phe Trp
 100 105 110
 Gln Gln Gly Glu Leu Leu Val Asn Lys Ile Ala Thr Ser Leu Arg Thr
 115 120 125
 Asp Ile Met Val Asp Arg Gln Thr Ala Val Trp Lys Leu Lys Asp Thr
 130 135 140
 Glu Leu Asp Val Asn Gly Ile Arg Leu Asp Val Asn Gly Ala Phe Arg
 145 150 155 160
 Arg Asp Thr Val Ala Lys Thr Ile Gly Met Asp Leu Glu Tyr Gly Leu
 165 170 175
 His Ala Pro Ser Met Glu Thr Val Leu Arg Met Ile Pro Lys Ser Tyr
 180 185 190
 Val Lys Asp Thr Lys Val Ser Ala Lys Gly Glu Val Thr Val Ser Gly
 195 200 205
 Arg Val Arg Gly Val Tyr Gly Asp Lys Lys Leu Pro Ala Val Ser Leu
 210 215 220
 Lys Ile Gly Ile Lys Glu Ala Ser Ala Gln Tyr Lys Gly Leu Pro Tyr
 225 230 235 240
 Gly Ile Asp Glu Val Thr Ala Asp Phe Asp Ala Tyr Val Asp Leu Met
 245 250 255
 Arg His Gln Pro Ser Tyr Leu Asn Leu Lys Ile Phe His Phe Lys Gly
 260 265 270
 Ala His Thr Glu Val Leu Ala Asp Ala Lys Val Asp Asp Leu Leu Asp
 275 280 285

Asp Pro Leu Ile Thr Phe His Thr Lys Ser Thr Val Asp Leu Asp Ala
 290 295 300
 Leu Ala Lys Thr Phe Pro Leu Gln Glu Ser Val Thr Ile Thr Gly Lys
 305 310 315 320
 Leu Asp Ala Asp Met Gly Met Lys Cys Arg Leu Ser Ala Leu Lys Lys
 325 330 335
 Gln Asp Ile Gly Arg Met Lys Leu Gly Lys Leu Glu Leu Lys Asp
 340 345 350
 Phe Glu Leu Lys Asp Thr Ala Lys Asp Phe Asp Phe Leu Gly Asn Ala
 355 360 365
 Thr Phe Arg Phe Arg Asp Asn Glu Thr Leu Gln Ala Gln Met Asp Val
 370 375 380
 Arg Lys Leu Val Leu Arg Ser Arg Phe Leu Ser Ser Asp Ile Glu Arg
 385 390 395 400
 Leu Val Ala Asn Val Ser Ser Thr Asn Pro Gln Asp Thr Asn Arg Ile
 405 410 415
 Val Ser Leu Gln Cys Asp Met Glu Val Ser Lys Leu Arg Ala Ser Met
 420 425 430
 Gly Asp Ser Ile Lys Leu Tyr Ser Ala Arg Ala Lys Ala Gln Ala Ala
 435 440 445
 Leu Gly Pro Gln Gly Val Asp Val Thr Lys Pro Ala Ile Asp Phe Ser
 450 455 460
 Leu Arg Ala Asp Ser Leu Phe Phe Ser Ala Ala Gly Thr Arg Met Ala
 465 470 475 480
 Met Asn Val Ala Gly Ile Lys Met Lys Ala Asp Lys Leu Asn Asp Ser
 485 490 495
 Leu Trp Met Pro Lys Gly Ile Val Gly Phe Asn Arg Leu Arg Phe Arg
 500 505 510
 Thr Pro Glu Phe Gly Leu Pro Ile Arg Met Ser Lys Thr Ala Val Thr
 515 520 525
 Val Asp Gly Pro Lys Ile Thr Leu Lys Asn Ala Ser Val Arg Ile Gly
 530 535 540
 Arg Ser Asn Met Thr Ala Thr Gly Asp Met Met Gly Val Tyr Arg Ala
 545 550 555 560
 Met Thr Lys Gly Glu Lys Leu Thr Ala His Leu Ser Leu Thr Ser Asp
 565 570 575
 Leu Ile Asp Cys Asn Gln Leu Ile Asn Ser Leu Ser Phe Pro Glu Asp
 580 585 590
 Thr Thr Glu Val Leu Thr Asp Ser Val Pro Ser Glu Met Lys Leu Phe
 595 600 605
 Val Ile Pro Arg Asn Ile Asp Phe Glu Leu Gln Thr Asp Leu Lys Lys
 610 615 620
 Val Ile Phe Glu Lys Met Leu Phe Glu Asn Val His Gly Ala Val Asp
 625 630 635 640
 Ile Lys Asn Gln Ala Ile His Leu Glu Asp Leu Ser Met Arg Ala Leu
 645 650 655
 Asp Ala Asp Met Lys Ala Val Met Val Tyr Lys Ala Gly Ser Pro Arg
 660 665 670
 Gly Gly Tyr Ala Gly Phe Asp Phe Lys Ile Arg Asn Ile Asn Ile Ala
 675 680 685
 Lys Leu Val Asp Phe Val Pro Ala Leu Asp Thr Ile Val Pro Met Leu
 690 695 700
 Arg Ser Phe Lys Gly Arg Val Met Phe Asp Val Ala Ala Asp Ala Arg
 705 710 715 720
 Leu Asp Ser Ala Met Asn Ile Arg Ile Pro Thr Leu Arg Ser Ala Ile
 725 730 735
 His Ile Lys Gly Asp Ser Leu Val Leu Met Asp Gly Glu Thr Phe Ala
 740 745 750
 Glu Ile Ser Lys Met Leu Met Phe Lys Asn Lys Lys Glu Asn Val Phe

755	760	765
Asp Ser Ile Ser Val Asn Val Thr Val His Asp Gly Asn Val Thr Val		
770	775	780
Tyr Pro Phe Leu Val Glu Ile Asp Arg Tyr Lys Ala Ala Val Gly Gly		
785	790	795
Glu Gln Gly Leu Asp Met Asn Phe Asn Tyr His Ile Ser Ile Leu Lys		800
	805	810
Ser Pro Leu Pro Phe Lys Ala Gly Val Asn Ile Ser Gly Asn Leu Asp		815
	820	825
Lys Met Lys Phe Arg Ile Gly Lys Ala Lys Tyr Lys Asp Ala Val Thr		830
	835	840
Pro Ala Ala Val His Arg Val Asp Ser Thr Arg Met Asn Met Gly Asn		845
	850	855
Glu Ile Val Asn Arg Phe Arg Arg Val Val Leu Gly Arg Gln Pro Arg		860
865	870	875
		880

<210> 6557

<211> 217

<212> PRT

<213> B.fragilis

<400> 6557

Lys Gln Ser Leu Asn Tyr Asn Trp Thr Leu Phe Met Arg Phe Gln Val		
1	5	10
Arg Ser Ile Leu Leu Phe Val Leu Leu Leu Ile Ile Phe Leu Gln Gln		15
	20	25
Thr Ile Ala Met Asn Val Leu Arg Asn Trp Leu Tyr Leu Phe Pro Ile		30
	35	40
Ser Leu Leu Met Ile Leu Leu Phe Ser Cys Asn Gln Ile Lys Glu Tyr		45
	50	55
Asp Ala Lys Glu Arg Thr Ser Arg Asn Thr Arg Val Gln His Leu Ile		60
65	70	75
Glu Lys Asp Ile Thr Trp Leu Val Gly Lys Lys Leu Asn Ser Val Asp		80
	85	90
Ser Ile Leu Pro Asn Glu Leu Leu His Glu Lys Val Leu Phe Leu Phe		95
	100	105
Asn Tyr His Asp Cys Gly Thr Cys Ile Lys Thr Gly Phe Ala Val Val		110
	115	120
Asn Ser Ile Asp Arg Gln Lys Gly Lys Glu Tyr Val Lys Val Ile Gly		125
	130	135
Ser Met Ile Ser Asp Leu Thr Ser Val Gln Arg Phe Asn Glu Tyr His		140
145	150	155
Gly Tyr Ile Tyr Val Asp Thr Lys Asp Leu Ile Arg Arg Glu Leu Lys		160
	165	170
Tyr Ala Pro Thr Pro Met Leu Leu Arg Val Asp Thr Asp Asn Arg Ile		175
	180	185
Leu Glu Ala Leu Ile Pro Thr Thr Glu Met Asp Asn Gln Thr Ile Lys		190
	195	200
Met Phe Ile Ala Ser Cys Leu Lys Arg		205
	210	215

<210> 6558

<211> 347

<212> PRT

<213> B.fragilis

<400> 6558

Gln Ile Lys Glu Gln Leu Leu Thr Lys Tyr Met Glu Glu Val Ile Glu		
1	5	10
		15

Pro Val Ser Lys Glu Leu Ile Ile Ala Glu Leu Thr Glu Asp Lys Arg
 20 25 30
 Leu Arg Met Thr Asn Lys Ser Asn Asn Gln Ile Tyr Ile Ile Thr Tyr
 35 40 45
 Gln Asp Ser Pro Asn Ile Met Arg Glu Ile Gly Arg Leu Arg Glu Ile
 50 55 60
 Ala Phe Arg Ala Ala Gly Gly Thr Gly Leu Ser Met Asp Ile Asp
 65 70 75 80
 Glu Tyr Asp Thr Met Glu Asn Pro Tyr Lys Gln Leu Ile Val Trp Asn
 85 90 95
 Pro Glu Ala Glu Glu Ile Leu Gly Gly Tyr Arg Tyr Ile Leu Gly Thr
 100 105 110
 Asp Val Arg Phe Asp Glu His Gly Ala Pro Val Leu Ala Thr Ser His
 115 120 125
 Met Phe Asn Phe Ser Asp Arg Phe Val Lys Glu Phe Leu Pro Thr Thr
 130 135 140
 Ile Glu Leu Gly Arg Ser Phe Val Thr Leu Glu Tyr Gln Ser Thr Arg
 145 150 155 160
 Ala Gly Ser Lys Gly Leu Phe Ala Leu Asp Asn Leu Trp Asp Gly Leu
 165 170 175
 Gly Ala Leu Thr Val Val Met Pro Asn Val Lys Tyr Phe Phe Gly Lys
 180 185 190
 Val Thr Met Tyr Pro Ser Tyr His Arg Gln Gly Arg Asp Met Ile Leu
 195 200 205
 Tyr Phe Leu Lys Lys His Phe Gly Asp Lys Asp Gly Leu Ile Thr Pro
 210 215 220
 Met Lys Pro Leu Glu Met Glu Thr Asp Glu Ala Glu Leu Ala Arg Ile
 225 230 235 240
 Phe Cys Lys Asp Ser Phe Lys Asp Asp Tyr Arg Ile Leu Asn Gly Glu
 245 250 255
 Ile Arg Lys Leu Gly Phe Asn Ile Pro Pro Leu Val Asn Ala Tyr Met
 260 265 270
 Ser Leu Ser Pro Thr Met Arg Met Phe Gly Thr Ala Ile Asn Tyr Gly
 275 280 285
 Phe Gly Asp Val Glu Glu Thr Gly Ile Leu Ile Ala Val Asp Glu Ile
 290 295 300
 Leu Glu Glu Lys Arg Met Arg His Ile Glu Ser Phe Val Lys Asn Asp
 305 310 315 320
 Pro Glu Asp Cys Gln Ile Thr Ser Gly Val Asn Lys Val Phe Thr Pro
 325 330 335
 Lys Val Val Thr Pro Gln Glu Asp Cys Ser Arg
 340 345

<210> 6559

<211> 486

<212> PRT

<213> B.fragilis

<400> 6559

Gly Met Lys Leu Lys Glu Ile Leu Thr Ser Ile Gln Pro Val Lys Ile
 1 5 10 15
 Thr Gly Asn Gln Asp Ile Glu Ile Thr Gly Val Asp Ile Asp Ser Arg
 20 25 30
 Gln Val Glu Ser Gly His Leu Phe Met Ala Met Arg Gly Thr Gln Thr
 35 40 45
 Asp Gly His Ala Tyr Ile Pro Ala Ala Val Glu Lys Gly Ala Thr Ala
 50 55 60
 Ile Leu Cys Glu Glu Leu Pro Ala Glu Leu Val Glu Gly Val Thr Tyr
 65 70 75 80

Ile	Gln	Val	Ala	Asp	Ser	Glu	Asp	Ala	Val	Gly	Lys	Ala	Ala	Thr	Thr
				85					90					95	
Phe	Tyr	Gly	Asn	Pro	Ser	Ser	Lys	Leu	Glu	Leu	Val	Gly	Val	Thr	Gly
			100					105					110		
Thr	Asn	Gly	Lys	Thr	Thr	Ile	Ala	Thr	Leu	Leu	Tyr	Asn	Thr	Phe	Arg
		115					120					125			
Tyr	Phe	Gly	Tyr	Lys	Val	Gly	Leu	Ile	Ser	Thr	Val	Cys	Asn	Tyr	Ile
	130					135					140				
Asp	Asp	Glu	Ala	Ile	Pro	Thr	Glu	His	Thr	Thr	Pro	Asp	Pro	Ile	Thr
145					150					155					160
Leu	Asn	Arg	Leu	Leu	Gly	Arg	Met	Ala	Asp	Glu	Gly	Cys	Lys	Tyr	Val
				165					170						175
Phe	Met	Glu	Val	Ser	Ser	His	Ser	Ile	Ala	Gln	Lys	Arg	Ile	Ser	Gly
			180					185					190		
Leu	Lys	Phe	Ala	Gly	Gly	Ile	Phe	Thr	Asn	Leu	Thr	Arg	Asp	His	Leu
		195					200					205			
Asp	Tyr	His	Lys	Thr	Val	Glu	Asn	Tyr	Leu	Lys	Ala	Lys	Lys	Lys	Phe
	210					215					220				
Phe	Asp	Asp	Met	Pro	Lys	Asn	Ser	Phe	Ser	Leu	Thr	Asn	Leu	Asp	Asp
225					230					235					240
Lys	Asn	Gly	Leu	Val	Met	Thr	Gln	Asn	Thr	Lys	Ser	Lys	Val	Tyr	Thr
				245					250					255	
Tyr	Ser	Leu	Arg	Ser	Leu	Ser	Asp	Phe	Lys	Gly	Arg	Val	Leu	Glu	Ser
			260					265					270		
His	Phe	Glu	Gly	Met	Leu	Leu	Asp	Phe	Asn	Asn	His	Glu	Leu	Ala	Val
		275					280					285			
Gln	Phe	Ile	Gly	Lys	Phe	Asn	Ala	Ser	Asn	Leu	Leu	Ala	Val	Phe	Gly
		290				295					300				
Ala	Ala	Val	Leu	Leu	Gly	Lys	Lys	Glu	Glu	Asp	Val	Leu	Val	Ala	Leu
305					310					315					320
Ser	Thr	Leu	His	Pro	Val	Ala	Gly	Arg	Phe	Asp	Ala	Ile	Arg	Ser	Pro
				325					330					335	
Gln	Gly	Tyr	Thr	Ala	Ile	Val	Asp	Tyr	Ala	His	Thr	Pro	Asp	Ala	Leu
			340					345					350		
Val	Asn	Val	Leu	Asn	Ala	Ile	His	Gly	Val	Leu	Glu	Gly	Lys	Gly	Lys
		355					360					365			
Val	Ile	Thr	Val	Val	Gly	Ala	Gly	Gly	Asn	Arg	Asp	Lys	Gly	Lys	Arg
	370					375					380				
Pro	Ile	Met	Ala	Lys	Glu	Ala	Ala	Arg	Ala	Ser	Asp	Arg	Val	Ile	Ile
385					390					395					400
Thr	Ser	Asp	Asn	Pro	Arg	Phe	Glu	Glu	Pro	Gln	Asp	Ile	Ile	Asn	Asp
				405					410					415	
Met	Leu	Ala	Gly	Leu	Asp	Thr	Glu	Asp	Lys	Lys	Lys	Thr	Leu	Ser	Ile
			420					425					430		
Ala	Asp	Arg	Lys	Glu	Ala	Ile	Arg	Thr	Ala	Cys	Met	Leu	Ala	Glu	Lys
			435					440				445			
Gly	Asp	Val	Ile	Leu	Val	Ala	Gly	Lys	Gly	His	Glu	Asn	Tyr	Gln	Asp
	450					455					460				
Ile	Lys	Gly	Val	Lys	His	His	Phe	Asp	Asp	Lys	Glu	Val	Leu	Lys	Glu
465					470					475					480
Ile	Phe	Ser	Leu	Thr	Val										
				485											

<210> 6560

<211> 82

<212> PRT

<213> B.fragilis

<400> 6560

Lys Pro Ser Cys Asn Trp His His Phe Tyr Tyr Lys Ala Gly Lys Arg
 1 5 10 15
 Lys Gly Val Lys Gln Arg Leu Phe Lys Arg Ala Pro Ile His Asp His
 20 25 30
 Phe Arg Thr Ser Met Ser Leu Val Glu Pro Gly Cys Ser Val Lys Phe
 35 40 45
 Thr Lys Pro Asp Gln Leu Phe His Glu Ser Lys Ile Thr Val Arg Phe
 50 55 60
 Trp Ile Val Thr Ile Val Leu Ala Ala Ile Thr Ile Ile Thr Leu Lys
 65 70 75 80
 Ile Arg

<210> 6561

<211> 595

<212> PRT

<213> B.fragilis

<400> 6561

Met Phe Gly Arg Ile Asn Asn Cys Ser Lys Met Lys Ile Asn Lys Leu
 1 5 10 15
 Leu Phe Gly Met Leu Leu Leu Leu Leu Ala Ser Cys Gly Ser Ser Arg
 20 25 30
 Lys Val Glu Lys Gln Ser Glu Gln Val Ala Val Gln Glu Ile Asn Leu
 35 40 45
 Thr Pro Glu Gln Gln Arg Lys Tyr Asp Tyr Phe Phe Leu Glu Ala Ser
 50 55 60
 Arg Leu Lys Val Lys Lys Glu Tyr Thr Ala Ala Phe Asp Leu Leu Gln
 65 70 75 80
 His Cys Leu Ala Ile Asn Pro Thr Gly Ser Ala Ala Leu Tyr Glu Ile
 85 90 95
 Ala Gln Tyr Tyr Leu Phe Leu Lys Gln Val Pro Gln Gly Gln Glu Ala
 100 105 110
 Leu Glu Lys Ala Val Ala Tyr Ala Pro Asp Asn Tyr Trp Tyr Ser Gln
 115 120 125
 Ala Leu Ala Gly Leu Tyr Gln Gln Gln Asp Gln Lys Glu Lys Ala Ile
 130 135 140
 Gly Ile Leu Glu Lys Met Ala Thr Arg Phe Pro Ala Lys Gln Asp Pro
 145 150 155 160
 Leu Phe Asn Leu Leu Asp Leu Tyr Asn Gln Lys Glu Asp Tyr Gly Lys
 165 170 175
 Val Ile Ser Thr Leu Asn Arg Ile Glu Glu Lys Thr Gly Lys Asn Glu
 180 185 190
 Gln Ile Thr Met Glu Lys Phe Arg Ile Tyr Leu Gln Met Lys Asp Asn
 195 200 205
 Lys Lys Ala Phe Glu Glu Ile Glu Ser Leu Val Asn Glu Tyr Pro Met
 210 215 220
 Asp Tyr Arg Tyr Gln Val Ile Leu Gly Asp Val Tyr Met Gln Asn Gly
 225 230 235 240
 Lys Lys Gln Glu Ala Tyr Asp Thr Tyr Lys Lys Val Leu Ala Ala Glu
 245 250 255
 Pro Asp Asn Pro Met Ala Leu Phe Ser Leu Ala Ser Tyr Tyr Glu Gln
 260 265 270
 Thr Gly Gln Lys Glu Leu Phe Glu Gln Gln Met Asp Thr Leu Leu Leu
 275 280 285
 Asn Arg Lys Val Pro Ser Asp Thr Lys Val Asn Val Met Arg Gln Phe
 290 295 300
 Ile Val Gln Ser Glu Gln Glu Gly Lys Asp Ser Thr Gln Val Ile Gly
 305 310 315 320

Leu Phe Asp Arg Met Met Gln Met Asp Met Asp Asp Val Gln Ile Pro
 325 330 335
 Met Leu Tyr Ala Gln Tyr Leu Leu Ser Lys Gly Met Glu Ala Gln Ser
 340 345 350
 Ile Pro Val Leu Glu Gln Val Val Gln Ile Asp Pro Thr Asn Lys Ala
 355 360 365
 Ala Arg Met Thr Leu Leu Gly Ser Ala Ile Arg Lys Asn Asp Tyr Glu
 370 375 380
 Gln Val Ile Lys Ile Cys Glu Pro Gly Ile Glu Ala Thr Pro Asp Ala
 385 390 395 400
 Leu Glu Phe Tyr Phe Tyr Leu Val Ile Ala Tyr Asn Gln Ala Glu His
 405 410 415
 Trp Asp Asp Val Leu Glu Val Ser Arg Lys Ala Leu Glu His Val Thr
 420 425 430
 Pro Glu Ser Asp Lys Gln Met Val Ser Asp Phe Tyr Thr Ile Ile Gly
 435 440 445
 Asp Val Tyr His Thr Lys Lys Leu Met Lys Glu Ala Tyr Val Ala Tyr
 450 455 460
 Asp Ser Ala Leu Val Tyr Asn Pro Ser Asn Ile Gly Ala Leu Asn Asn
 465 470 475 480
 Tyr Ala Tyr Tyr Leu Ser Val Glu Arg Arg Asp Leu Asp Lys Ala Glu
 485 490 495
 Glu Met Ser Tyr Lys Thr Val Lys Ala Ala Pro Asn Asn Ala Thr Tyr
 500 505 510
 Leu Asp Thr Tyr Ala Trp Ile Leu Phe Glu Lys Gly Asn Tyr Ala Glu
 515 520 525
 Ala Arg Ile Tyr Ile Asp Asp Ala Ile Lys Asn Thr Lys Pro Glu Glu
 530 535 540
 Glu Ser Ser Val Val Phe Glu His Cys Gly Asp Ile Tyr Phe Met Thr
 545 550 555 560
 Gly Asp Val Glu Gly Ala Leu Lys Tyr Trp Lys Lys Ala Leu Glu Leu
 565 570 575
 Gly Thr Glu Ser Lys Thr Leu Lys Gln Lys Ile Glu Lys Lys Lys Tyr
 580 585 590
 Ile Ala Glu
 595

<210> 6562

<211> 389

<212> PRT

<213> B.fragilis

<400> 6562

Thr Val Met Leu Asn Leu Lys Ser Asn Met Asn Lys Glu Asn Asn Lys
 1 5 10 15
 Glu Gly Gln Gly Asp Ala Leu Arg Val Ile Ile Ser Gly Gly Gly Thr
 20 25 30
 Gly Gly His Ile Phe Pro Ala Val Ser Ile Ala Asn Ala Ile Lys Glu
 35 40 45
 Leu Arg Pro Asp Ala Gln Ile Leu Phe Val Gly Ala Glu Gly Arg Met
 50 55 60
 Glu Met Gln Arg Val Pro Asp Ala Gly Tyr Gln Ile Ile Gly Leu Pro
 65 70 75 80
 Val Ala Gly Phe Asp Arg Lys His Leu Trp Lys Asn Val Ala Val Leu
 85 90 95
 Leu Lys Leu Val Arg Ser Gln Trp Lys Ala Arg Asn Ile Ile Arg Gln
 100 105 110
 Phe Arg Pro Gln Val Ala Val Gly Val Gly Gly Tyr Ala Ser Gly Pro
 115 120 125

Thr Leu Lys Met Ala Gly Met Met Gly Val Pro Thr Leu Ile Gln Glu
 130 135 140
 Gln Asn Ser Tyr Ala Gly Val Thr Asn Lys Leu Leu Ala Gln Lys Ala
 145 150 155 160
 Arg Arg Ile Cys Val Ala Tyr Asp Gly Met Glu Lys Phe Phe Pro Ala
 165 170 175
 Asn Lys Ile Ile Met Thr Gly Asn Pro Val Arg Gln Asn Leu Leu Ala
 180 185 190
 Glu Lys Pro Glu Arg Glu Gln Ala Ile Arg Ser Phe Gly Leu Asn Pro
 195 200 205
 Glu Lys Lys Thr Ile Leu Ile Leu Gly Gly Ser Leu Gly Ala Arg Thr
 210 215 220
 Ile Asn Asn Thr Leu Ile Ala Gly Leu Gln Leu Ile Arg Arg Thr Thr
 225 230 235 240
 Asp Val Gln Phe Ile Trp Gln Thr Gly Lys Ile Tyr His Gln Gln Val
 245 250 255
 Thr Glu Ala Val Lys Ala Ala Gly Glu Ile Leu Asn Leu Phe Val Thr
 260 265 270
 Asp Phe Ile Lys Asp Met Ala Ala Tyr Ala Ala Ala Asp Leu Val
 275 280 285
 Ile Ser Arg Ala Gly Ala Gly Ser Ile Ser Glu Phe Cys Leu Leu Asn
 290 295 300
 Lys Pro Val Ile Leu Val Pro Ser Pro Asn Val Ala Glu Asp His Gln
 305 310 315 320
 Thr Lys Asn Ala Leu Ala Leu Val Asn Lys Gln Ala Ala Ile Tyr Val
 325 330 335
 Lys Asp Ala Glu Ala Glu Asn Lys Leu Leu Pro Val Ala Leu Glu Thr
 340 345 350
 Ile Ala Asn Ala Glu Lys Leu Ser Glu Leu Ser Glu Asn Ile Ala His
 355 360 365
 Leu Ala Leu Pro Asp Ser Ala Val Val Ile Ala Lys Glu Val Ile Lys
 370 375 380
 Leu Ala Gln Gln Ser
 385

<210> 6563
 <211> 206
 <212> PRT
 <213> B.fragilis

<400> 6563
 Thr Glu Asn Arg Lys Lys Glu Ile His Cys Arg Met Lys Gly Ser Lys
 1 5 10 15
 Leu Lys Gln Thr Val Ile Lys Gln Ser Tyr Leu Leu Pro Leu Leu Leu
 20 25 30
 Met Val Val Leu Leu Ala Gly Cys Lys Thr Ser Lys Val Val Lys Thr
 35 40 45
 Thr Pro Val Glu Pro Ala Tyr Leu Ser Ser Lys Leu Gln Leu Thr Val
 50 55 60
 Pro Asn Lys Asn Gly Ser Met Thr Val Ser Gly Ser Met Lys Met Lys
 65 70 75 80
 Ser Gly Glu Arg Ile Gln Leu Ser Val Leu Met Pro Val Phe Arg Ser
 85 90 95
 Glu Val Met Arg Met Glu Val Thr Pro Asp Glu Val Leu Leu Ile Asp
 100 105 110
 Arg Met Asn Lys Arg Tyr Val Arg Ala Thr Arg Asp Glu Leu Lys Gly
 115 120 125
 Ile Leu Pro Glu Asn Ala Asp Phe Asp Arg Leu Glu Lys Leu Leu Phe
 130 135 140

Lys Ala Ser Leu Pro Gly Glu Lys Lys Glu Leu Thr Gly Arg Glu Leu
 145 150 155 160
 Gly Ile Pro Ser Leu Glu Lys Ala Lys Val Arg Leu Ser Asp Phe Ser
 165 170 175
 Thr Ala Glu Phe Glu Leu Ile Pro Thr Glu Val Ser Ser Arg Tyr Thr
 180 185 190
 Gln Val Ala Leu Glu Asp Leu Leu Lys Met Leu Ile Gln Leu
 195 200 205

<210> 6564
 <211> 150
 <212> PRT
 <213> B.fragilis

<400> 6564
 Ile Val Asn Arg Leu Asn Met Asn Ile Gln Val Ile Asn Lys Ser Lys
 1 5 10 15
 His Pro Leu Pro Ala Tyr Ala Thr Glu Leu Ser Ala Gly Met Asp Ile
 20 25 30
 Arg Ala Asn Ile Ser Glu Pro Ile Ser Leu Ala Pro Met Gln Arg Cys
 35 40 45
 Leu Val Pro Thr Gly Leu Phe Ile Ala Leu Pro Gln Gly Phe Glu Ala
 50 55 60
 Gln Ile Arg Pro Arg Ser Gly Leu Ala Leu Lys Lys Gly Ile Thr Val
 65 70 75 80
 Leu Asn Ser Pro Gly Thr Ile Asp Ala Asp Tyr Arg Gly Glu Ile Cys
 85 90 95
 Ile Ile Leu Val Asn Leu Ser Ala Glu Thr Phe Val Ile Glu Asp Gly
 100 105 110
 Glu Arg Ile Ala Gln Met Val Ile Ala Arg His Glu Gln Ala Val Trp
 115 120 125
 Lys Glu Val Glu Val Leu Asp Glu Thr Glu Arg Gly Ala Gly Gly Phe
 130 135 140
 Gly His Thr Gly Arg Gly
 145 150

<210> 6565
 <211> 723
 <212> PRT
 <213> B.fragilis

<400> 6565
 Asp Asp Leu Ser Met Arg Ile Gly Phe Phe Ser Gly Met Leu Gly Gly
 1 5 10 15
 Leu Cys Leu Ile Ser Thr Leu His Ala Gln Glu Pro Asp Ser Leu Lys
 20 25 30
 Ala Val Ser Leu Ser Glu Val Val Val Thr Glu Ser Tyr Gln His Leu
 35 40 45
 Lys Asn Lys Asn Ser Thr Trp Arg Met Glu Val Val Gly Lys Glu Phe
 50 55 60
 Leu Arg Glu His Phe Thr Gly Asn Leu Ile Gln Thr Leu Gly Thr Leu
 65 70 75 80
 Pro Gly Val His Ser Met Asp Ile Gly Ser Gly Phe Ser Lys Pro Met
 85 90 95
 Ile Arg Gly Met Gly Phe Asn Arg Ile Ser Val Val Glu Asn Gly Ile
 100 105 110
 Lys Gln Glu Gly Gln Gln Trp Gly Ala Asp His Gly Leu Glu Leu Asp
 115 120 125
 Ala Phe Asn Ala Gly Gln Val Ser Ile Arg Lys Gly Pro Ala Ser Leu

130	135	140
Leu Tyr Gly Ser Asp Ala Met Gly Gly Ala Ile Glu Leu Val Pro Leu		
145	150	155
Pro Leu Pro Ala Gly Asn Arg Leu Phe Gly Glu Ala Ser Leu Leu Gly		160
	165	170
Lys Ser Val Asn Gly Thr Leu Gly Gly Ser Leu Met Leu Gly Ile Lys		175
	180	185
Lys Asp Ala Trp Tyr Thr Trp Ala Arg Tyr Ser Glu Gln His Phe Gly		190
	195	200
Asp Tyr Arg Ile Pro Thr Asp Thr Ile Val Tyr Leu Thr Gln Arg Met		205
	210	215
Pro Val Tyr His Arg Arg Leu Lys Asn Thr Ala Gly Phe Glu Arg Asp		220
225	230	235
Val Ser Trp Ala Ala Gly Phe Arg Lys Glu Arg Tyr Val Ser Ser Tyr		240
	245	250
Trp Val Ser Asn Val Phe Gln Lys Thr Gly Phe Phe Pro Gly Ala His		255
	260	265
Gly Ile Pro Asp Val Ser Arg Leu Gln Asp Asp Gly Asp Ser Arg Asn		270
	275	280
Ile Glu Leu Pro Tyr Ser Gln Val Asn His Leu Lys Val Ser Thr Arg		285
	290	295
Gln Ser Leu Leu Tyr Asp Lys Trp Ala Leu Thr Trp Asp Ile Gly Phe		300
305	310	315
Gln Lys Asn His Arg Glu Glu Trp Ser Arg Phe His Thr His Tyr Asp		320
	325	330
Ala Gln Pro Val Pro Asp Lys Asp Pro Asp Lys Glu Leu Ala Phe Thr		335
	340	345
Leu Asn Thr Tyr Ser Ser Ala Val Lys Leu Lys Leu Phe Ala Ser Ala		350
	355	360
Val Trp Gln His Thr Ala Gly Trp Asp Val Gln Tyr Gln Arg Asn Thr		365
	370	375
Ile Ala Gly Tyr Ser Phe Leu Leu Pro Ala Tyr Arg Arg Phe Thr Thr		380
385	390	395
Gly Ala Phe Trp Met Thr Thr Tyr Arg Pro Gly Pro Thr Leu Ser Phe		400
	405	410
Ser Gly Gly Leu Arg Tyr Asp Tyr Gly Lys Ile Asp Ala Ser Ala Tyr		415
	420	425
Thr Asp Pro Tyr Leu Ala Ile Tyr Leu Arg Glu Gln Gly Tyr Gly Asp		430
	435	440
Glu Phe Ile Arg Lys Tyr Glu Trp Arg Ser Tyr Pro Val Arg Arg His		445
	450	455
Phe Gly Asp Tyr Ser Gly Ser Leu Gly Leu Val Trp Ser Pro Ser Gly		460
465	470	475
Gly His Leu Leu Gln Val Asn Val Gly His Ser Phe Arg Leu Pro Gly		480
	485	490
Ala Asn Glu Leu Ala Ser Asn Gly Val His His Gly Thr Phe Arg His		495
	500	505
Glu Gln Gly Asp Ala Ala Leu Ala Ser Glu Arg Gly Trp Gln Phe Asp		510
	515	520
Ala Ser Tyr Thr Tyr Glu Asn Gly Pro Leu Ser Val Ser Leu Ser Pro		525
	530	535
Phe Val Ser Trp Phe Ser Asn Tyr Ile Phe Leu Arg Pro Thr Gly Glu		540
545	550	555
Trp Ser Ile Leu Pro His Ala Gly Gln Ile Tyr Arg Tyr Thr Gly Ala		560
	565	570
Glu Ala Leu Phe Ala Gly Gly Glu Ala Ala Val Gly Ile Asp Phe Leu		575
	580	585
Arg His Phe Asn Tyr Arg Val Ser Gly Glu Tyr Val Tyr Thr Tyr Asn		590
	595	600
		605

130 135 140
 145 150 155
 160 165 170
 175 180 185
 190 195 200
 205 210 215
 220 225 230
 235 240 245
 250 255 260
 265 270 275
 280 285 290
 295 300 305
 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395
 400 405 410
 415 420 425
 430 435 440
 445 450 455
 460 465 470
 475 480 485
 490 495 500
 505 510 515
 520 525 530
 535 540 545
 550 555 560
 565 570 575
 580 585 590
 595 600 605

Cys Asp Glu His Ile Pro Leu Ser Phe Ser Pro Pro Ala Ser Leu Arg
 610 615 620
 Asn Thr Leu Thr Trp Arg Tyr Lys Glu Phe Ser Ile Tyr Gly Glu Val
 625 630 635 640
 Gln His Ile Ala Ala Gln His Arg Val Ala Arg Asn Glu Asp Pro Thr
 645 650 655
 Pro Gly Ala Gln Leu Leu Asn Ala Gly Val Ser Ala Asn Leu Arg Ile
 660 665 670
 Gly Gly Ile Trp Ala Glu Val Thr Leu Ser Ala Arg Asn Leu Ser Gly
 675 680 685
 Ala Lys Tyr Phe Asn His Leu Ser Phe Tyr Arg Lys Val Glu Ile Pro
 690 695 700
 Glu Pro Gly Arg Asn Phe Gln Ile Leu Ile Lys Val Pro Phe Lys Ser
 705 710 715 720
 Leu Leu Lys

<210> 6566
 <211> 118
 <212> PRT
 <213> B.fragilis

<400> 6566
 Asn Lys Arg Ser Glu Met Glu Asp Lys Glu Ala Lys Lys Lys Lys Ser
 1 5 10 15
 Asn Ser Leu Lys Ser Ile Leu Gly Gly Asp Ile Leu Ala Thr Asp Phe
 20 25 30
 Phe Arg Arg Gln Thr Lys Leu Leu Val Leu Ile Met Val Leu Ile Ile
 35 40 45
 Phe Tyr Ile His Asn Arg Tyr Ala Ser Gln Gln Gln Gln Ile Glu Ile
 50 55 60
 Asp Lys Leu Lys Lys Glu Leu Ile Asp Ile Lys Tyr Asp Ala Leu Thr
 65 70 75 80
 Arg Ser Ser Glu Leu Met Glu Lys Ser Arg Gln Ser Arg Ile Glu Asp
 85 90 95
 Tyr Ile Ser Thr Lys Glu Ser Asp Leu Gln Thr Ser Thr His Pro Pro
 100 105 110
 Tyr Leu Ile Ser Thr Lys
 115

<210> 6567
 <211> 198
 <212> PRT
 <213> B.fragilis

<400> 6567
 Ser Leu Ile Phe Pro Arg His Cys Leu Lys Asn Ala Val Asn Leu His
 1 5 10 15
 His Arg Lys Thr Thr Asn Ile His Asn Leu Lys Ser Asn Val Met Lys
 20 25 30
 Ser Leu Ser Phe Arg Lys Asp Leu Ile Gly Val Gln Glu Glu Leu Leu
 35 40 45
 Arg Phe Ala Tyr Lys Leu Thr Asp Arg Glu Glu Ala Asn Asp Leu
 50 55 60
 Leu Gln Glu Thr Ser Leu Lys Ala Leu Asp Asn Glu Asp Lys Tyr Thr
 65 70 75 80
 Pro Asp Thr Asn Phe Lys Gly Trp Met Tyr Thr Ile Met Arg Asn Ile
 85 90 95
 Phe Ile Asn Asn Tyr Arg Lys Val Val Arg Asp Gln Thr Phe Val Asp

[illegible]

<400> 6568

<400> 6569

Tyr	Lys	Ser	Ile	Ser	Leu	Phe	Ile	Met	Lys	Arg	Lys	Ile	Phe	Ser	Leu
1				5					10					15	
Ile	Val	Val	Leu	Val	Val	Thr	Ile	Ser	Phe	Ile	Asn	Val	Trp	Ile	Ser
			20					25					30		
Val	Gly	Ser	Thr	Asn	Ala	Lys	Val	Lys	Leu	Arg	Leu	Ala	Ala	Ile	Asp
		35					40					45			
Ala	Met	Ala	Met	Ile	Glu	Ala	Glu	Thr	Pro	Gly	Asp	Thr	Glu	Leu	Ser
	50					55					60				
Leu	Ser	Gly	Ser	Cys	Lys	Ile	Thr	Phe	Thr	Cys	Tyr	Asp	Ser	Trp	Thr
65					70					75					80

Gly	Ala	Ala	Asp	Gly	Ser	Ile	Thr	Cys	Trp	Gly	Ala	Glu	Tyr	Cys	Lys
			85					90						95	
Arg	Gly	Ile	Lys	Lys	Glu	Gly	Ile	Val	Ile	Ile	Thr	Glu	Thr	Arg	Trp
			100					105						110	
Val	Glu	Cys	Asp	Gly	Lys	Arg	Thr	Glu	Cys						
			115					120							

<210> 6570

<211> 414

<212> PRT

<213> B.fragilis

<400> 6570

Gly	Asn	His	Met	Thr	Lys	Ala	Ile	Asp	Phe	Arg	Tyr	Glu	Cys	Lys	Ile
1			5					10						15	
Ile	Val	Ile	Asn	Glu	Lys	Gln	Ile	Met	Lys	Ile	Val	Asn	Ile	Phe	Val
			20					25					30		
Ala	Leu	Phe	Cys	Leu	Thr	Ala	Cys	Ser	Leu	Ser	Asn	Asp	Leu	Lys	Asp
			35				40					45			
Arg	Leu	Ile	Leu	Lys	Pro	Gln	Ser	Ile	Leu	Ile	Asp	Pro	Asp	Lys	Val
			50			55					60				
Lys	Asp	Phe	Ile	Asp	Leu	Thr	Pro	Leu	Leu	Arg	Asp	Ser	Val	Glu	Ile
65				70						75				80	
Ile	Pro	Leu	Glu	Thr	Lys	Asp	Glu	Cys	Leu	Leu	Ser	Glu	Ile	Glu	Arg
			85					90						95	
Ile	Glu	Phe	Tyr	Lys	Asp	Arg	Ile	Phe	Val	Leu	Asp	Arg	Thr	Arg	Lys
			100					105					110		
Gly	Val	Tyr	Met	Phe	Asp	Gln	Ser	Gly	Arg	Phe	Ile	Gly	Lys	Ile	Gly
			115					120				125			
Cys	Gln	Gly	Ser	Gly	Pro	Gly	Glu	Phe	Thr	Ser	Val	Gly	Phe	Phe	Cys
			130			135					140				
Val	Thr	Gly	Asp	Ser	Val	Leu	Ile	Ser	Asp	Gln	His	Gln	Ser	Lys	Trp
145					150					155					160
Val	Val	Tyr	Asn	Leu	Gln	Asp	Lys	Arg	Thr	Thr	Glu	Phe	Ser	Cys	Gly
			165						170					175	
Glu	Phe	Thr	Tyr	Leu	Asn	Gly	Phe	Leu	Met	Gly	Arg	Asn	Leu	Tyr	Leu
			180					185					190		
Val	Ser	Asn	Tyr	Asn	Lys	Ser	Gln	Ser	Asp	Arg	Phe	Asn	Leu	Tyr	Lys
		195					200					205			
Phe	Asp	Val	Ser	Thr	Arg	Lys	Ile	Glu	Glu	Ala	Leu	Ile	Pro	Phe	Glu
		210				215					220				
Glu	Lys	Met	Asp	Lys	Tyr	Ser	Thr	Thr	Ala	Phe	Thr	Ile	Tyr	Ala	Ser
225				230						235					240
Gln	Tyr	Gln	Asp	Thr	Ala	Phe	Leu	Ile	Tyr	Pro	Phe	Asn	Asp	Thr	Ile
			245						250					255	
Tyr	Glu	Val	Ser	Ser	Lys	Gly	Ala	Gln	Pro	Phe	Tyr	Thr	Ile	Asp	Phe
			260					265					270		
Thr	Gln	Arg	Asn	Leu	Pro	Asp	Asp	Ile	Glu	Pro	Ile	Asn	Asn	Ser	Phe
		275					280						285		
Arg	Leu	Ala	Val	Ala	Lys	Gly	Asn	Phe	Val	Lys	Gly	Leu	Ser	Tyr	Met
		290				295					300				
Gln	Met	Ser	Gly	Asn	Tyr	Ile	Leu	Gly	Arg	Tyr	Ala	Asp	Lys	Gly	Tyr
305				310						315					320
Phe	Arg	Tyr	Leu	Ser	Val	Asp	Arg	Ser	Thr	Leu	Lys	Ser	Thr	Val	Gly
			325						330					335	
Asn	Ser	Phe	Val	Val	Arg	Asp	Leu	Gly	Tyr	Leu	Pro	Val	Thr	Ser	Phe
			340					345					350		
Tyr	Thr	Ile	Gly	Asp	Ala	Leu	Val	Ser	Val	Tyr	Ser	Ala	Ser	Ala	Leu
			355				360						365		

Met Gln Met Leu Asp Val Ile Leu Ser Pro Asp Ser Pro Ile Lys Glu
 370 375 380
 Lys Tyr Arg Thr Lys Phe Glu Ser Leu Lys Gln Ile Thr Asn Cys Glu
 385 390 395 400
 Gly Asn Pro Val Leu Leu Lys Phe Gln Phe Glu Ser Ala Glu
 405 410

<210> 6571
 <211> 265
 <212> PRT
 <213> B.fragilis

<400> 6571
 Asp Ser Ser Ile Arg Leu Ser Ile Ser Ser Phe Phe Val Ala Leu Leu
 1 5 10 15
 Pro Glu Arg Lys Val Arg Ala Met Leu Gln Lys Thr Val Gly Ile Val
 20 25 30
 Leu His Val Leu Lys Tyr Asn Asp Thr Ser Asn Ile Val Glu Met Tyr
 35 40 45
 Thr Glu Leu Ser Gly Arg Ala Ser Phe Leu Val Thr Val Pro Arg Ser
 50 55 60
 Lys Lys Ala Thr Val Lys Ser Val Leu Phe Gln Pro Leu Ala Leu Ile
 65 70 75 80
 Glu Phe Glu Ala Asp Tyr Arg Pro Asn Thr Ser Leu Phe Arg Ile Lys
 85 90 95
 Glu Ala Lys Ser Phe Ser Pro Phe Thr Ser Ile Pro Tyr Asp Pro Phe
 100 105 110
 Lys Ser Ala Ile Ala Leu Phe Leu Ala Glu Phe Leu Tyr Arg Ala Ile
 115 120 125
 Arg Glu Glu Ala Glu Asn Arg Pro Leu Phe Ala Tyr Leu Gln His Ser
 130 135 140
 Ile Leu Trp Leu Asp Thr Cys Lys Ile Ser Phe Ala Asn Phe His Leu
 145 150 155 160
 Val Phe Leu Met Arg Leu Ser Arg Phe Leu Gly Leu Tyr Pro Asn Leu
 165 170 175
 Asp Asp Tyr His Ala Gly Asp Tyr Phe Asp Met Leu Asn Ala Thr Phe
 180 185 190
 Thr Ser Val Arg Pro Gln Leu His Ser Ser Tyr Ile Gln Pro Asp Glu
 195 200 205
 Ala Gly Arg Leu Leu Gln Leu Met Arg Met Asn Tyr Glu Thr Met His
 210 215 220
 Leu Phe Gly Met Asn Arg Thr Glu Arg Ala Arg Cys Leu Ala Ile Ile
 225 230 235 240
 Asn Glu Tyr Tyr Arg Leu His Leu Pro Asp Phe Pro Ile Leu Lys Ser
 245 250 255
 Leu Asp Val Leu Lys Glu Leu Phe Asp
 260 265

<210> 6572
 <211> 171
 <212> PRT
 <213> B.fragilis

<400> 6572
 Lys Pro Lys Ile Leu Met Ser Ile Asn Tyr Ala Val Thr Lys Lys Val
 1 5 10 15
 Asp Lys Ser Lys Gly Ile Ala Lys Glu Arg Tyr Tyr Ala Thr Thr Arg
 20 25 30
 Ala Leu Gln Lys Lys Pro Val Asn Ser Val Gln Ile Ala Asn Gln Leu

35	40	45
Ala Glu Arg Ser Ser Leu	Gln Asn Gly Asp Val	Leu Ser Ala Leu Thr
50	55	60
Gln Leu Ser Asp Ile Ile	Ala Ala His Leu Lys	Glu Gly Arg Thr Val
65	70	75
Ser Ile Asp Gly Leu Gly	Asn Phe Tyr Pro Ser	Ile Thr Ser Glu Ala
85	90	95
Val Asp Lys Pro Glu Glu	Cys Thr Ala Asn Lys	Val Trp Val Ser Arg
100	105	110
Ile Cys Phe Lys Ala Ala	Pro Ala Phe Leu Asn	Asn Val Arg Lys Thr
115	120	125
Asp Phe Val Ser Leu Gln	Leu Lys Tyr Gly Arg	Lys Ser Thr Lys Ser
130	135	140
Gln Asn Gly Ser Asp Lys	Glu Thr Thr Asp Val	Ile Pro His Gln Gln
145	150	155
Ser Ile Ser Glu Asp Ser	Ser Leu Ser Asp Glu	
165	170	

<210> 6573
 <211> 352
 <212> PRT
 <213> B.fragilis

<400> 6573

Lys Asn Arg Met Leu Ile Met Ser Ala Ser Phe Asn Leu Leu Asp Arg	
1	5 10 15
Lys Arg Leu Lys Gly Leu Leu Leu Phe Cys Pro Val Trp Val Leu Leu	
20	25 30
Phe Trp Gly Cys Gly Arg Thr Val Glu Ser Pro Glu Lys Val Leu Lys	
35	40 45
Cys Glu Leu Val Ser Tyr Ile Lys Ser Tyr Pro Asp Ser Ser Phe Phe	
50	55 60
Ser Gln Val Gly Thr Met Gln Tyr Gln Asp Gly Lys Ile Tyr Leu Leu	
65	70 75 80
Asp Glu Ala Arg Arg Asp Val Ala Val Met Asp Leu Glu Phe Ser Asp	
85	90 95
Phe Ser Leu Ile Gly Lys Pro Gly Asp Gly Pro Gly Glu Leu Val Arg	
100	105 110
Pro Val Gly Phe Tyr Val Glu Lys Asp Thr Val Tyr Ile Leu Asp Gly	
115	120 125
Gly Thr Val Asn Val Lys Arg Tyr Phe Asp Ser Glu Phe Ile Ser Ser	
130	135 140
Phe Ser Val Pro Ala Ala Asn Asp Tyr Arg Phe Phe Met Asn Lys Asp	
145	150 155 160
Thr Ile Phe Leu Ser Ala Val Thr Asp Ser Thr Phe Tyr Thr Lys Ser	
165	170 175
Ala Glu Ser Trp Gln Arg Gly Asp Leu Phe Thr Leu Val Leu Ala Gly	
180	185 190
Asn Val His Asp Phe Gly Asn Ala Arg Arg Asn Met Val Leu Asn Gln	
195	200 205
Arg His Leu Val Lys Asp Ser Thr Ser Leu Tyr Gly Ile Thr Ser Ser	
210	215 220
Ser Ser Leu Leu Gly Lys Tyr Asp Leu Ser Ser Asn Lys Gln Val Ala	
225	230 235 240
Thr Phe Asp Leu Ser Val Ser Leu Ile Lys Asp Asn Leu Thr Tyr	
245	250 255
Glu Gly Ser Gln Pro Tyr Asp Pro Lys Ser Tyr Tyr Thr Phe Ile Ser	
260	265 270
Asp Ala Tyr Ala Met Asn Gly Tyr Leu Tyr Leu Leu Cys Ser Glu Leu	

115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270

$$\begin{array}{l} \text{I} \\ \text{II} \\ \text{III} \\ \text{IV} \\ \text{V} \\ \text{VI} \\ \text{VII} \\ \text{VIII} \\ \text{IX} \\ \text{X} \\ \text{XI} \\ \text{XII} \\ \text{XIII} \\ \text{XIV} \\ \text{XV} \\ \text{XVI} \\ \text{XVII} \\ \text{XVIII} \\ \text{XIX} \\ \text{XX} \\ \text{XXI} \\ \text{XXII} \\ \text{XXIII} \\ \text{XXIV} \\ \text{XXV} \\ \text{XXVI} \\ \text{XXVII} \\ \text{XXVIII} \\ \text{XXIX} \\ \text{XXX} \end{array}$$

<400> 6574

<210> 6575

<400> 6575

Lys	Met	Ala	Val	Asn	Lys	Lys	Asn	Ile	Met	Thr	Arg	Tyr	Phe	Phe	Val
1				5					10					15	
Ile	Leu	Leu	Met	Gly	Leu	Ile	Gly	Val	Ala	Ile	Val	Val	Lys	Ala	Gly
			20					25					30		
Ile	Thr	Met	Phe	Ala	Glu	Arg	Gln	Tyr	Trp	Gln	Asp	Val	Ala	Asp	Arg
		35					40					45			
Phe	Val	Lys	Glu	Asn	Val	Thr	Val	Lys	Pro	Asn	Arg	Gly	Asn	Ile	Ile
	50					55					60				
Ser	Ser	Asp	Gly	Lys	Leu	Met	Ala	Ser	Ser	Leu	Pro	Glu	Tyr	Arg	Ile
65				70						75					80
Tyr	Met	Asp	Phe	Lys	Ala	Gly	Gly	Val	Lys	Lys	Asp	Thr	Met	Leu	Met
			85						90					95	
Asn	His	Leu	Asp	Glu	Ile	Cys	Glu	Gly	Leu	His	Lys	Ile	Phe	Pro	Asp
			100					105					110		
Lys	Ser	Ala	Ser	Glu	Phe	Lys	Thr	His	Leu	Lys	Lys	Gly	Arg	Lys	Gln
		115					120					125			

Gly	Ser	Arg	Asn	Tyr	Leu	Ile	Tyr	Pro	Lys	Arg	Ile	Ser	Tyr	Ile	Gln
130						135					140				
Tyr	Lys	Glu	Ala	Lys	Arg	Leu	Pro	Val	Phe	Asn	Leu	Asn	Lys	Tyr	Lys
145					150					155					160
Gly	Gly	Phe	His	Glu	Leu	Ala	Tyr	Asn	Gln	Arg	Lys	Lys	Pro	Phe	Gly
				165					170					175	
Ser	Leu	Ala	Ala	Arg	Thr	Leu	Gly	Asp	Leu	Tyr	Ala	Asp	Thr	Ala	Gln
			180					185					190		
Gly	Ala	Lys	Asn	Gly	Ile	Glu	Leu	Ala	Phe	Asp	Ser	Ile	Leu	Lys	Gly
	195					200					205				
His	Asp	Gly	Ile	Thr	His	Arg	Gln	Lys	Val	Met	Asn	Lys	Tyr	Leu	Asn
210						215					220				
Ile	Val	Asp	Ile	Pro	Pro	Val	Asp	Gly	Cys	Asp	Leu	Leu	Ser	Thr	Ile
225					230					235					240
Asp	Val	Gly	Met	Gln	Asp	Ile	Cys	Glu	Lys	Ala	Leu	Thr	Asp	Lys	Leu
				245					250					255	
Lys	Glu	Leu	Asn	Ala	Ser	Val	Gly	Val	Ala	Val	Leu	Met	Glu	Val	Ala
			260					265					270		
Thr	Gly	Glu	Val	Lys	Ala	Ile	Val	Asn	Met	Thr	Lys	Ala	Gly	Asp	Gly
	275						280					285			
Asn	Tyr	Tyr	Glu	Met	Arg	Asn	Asn	Ala	Ile	Ser	Asp	Met	Leu	Glu	Pro
290						295					300				
Gly	Ser	Thr	Phe	Lys	Thr	Ala	Ser	Ile	Met	Val	Ala	Leu	Glu	Asp	Gly
305					310					315					320
Lys	Ile	Thr	Pro	Glu	Asp	Gly	Ile	Asp	Thr	Gly	Asn	Gly	Ile	Lys	Met
				325					330					335	
Met	His	Gly	Arg	Pro	Met	Lys	Asp	Trp	Asn	Trp	Tyr	Lys	Gly	Gly	Tyr
			340					345					350		
Gly	Tyr	Leu	Thr	Val	Thr	Gln	Ile	Leu	Glu	Val	Ser	Ser	Asn	Ile	Gly
		355				360						365			
Thr	Ser	Ser	Ile	Ile	Glu	Lys	Tyr	Tyr	Gly	Ser	Asn	Pro	Gln	Lys	Phe
	370					375					380				
Val	Asp	Gly	Leu	Lys	Arg	Met	Ser	Ile	Asp	Gln	Pro	Leu	Gln	Leu	Gln
385					390					395					400
Ile	Ala	Gly	Glu	Gly	Lys	Pro	Asn	Ile	Lys	Gly	Pro	Lys	Glu	Arg	Tyr
			405						410					415	
Phe	Ala	Lys	Thr	Thr	Leu	Pro	Trp	Met	Ser	Ile	Gly	Tyr	Glu	Thr	Gln
		420					425						430		
Val	Pro	Pro	Met	Asn	Ile	Leu	Thr	Phe	Tyr	Asn	Ala	Ile	Ala	Asn	Asn
		435					440					445			
Gly	Val	Met	Val	Arg	Pro	Lys	Phe	Val	Lys	Ala	Ala	Ile	Lys	Asn	Gly
	450					455					460				
Glu	Ile	Val	Lys	Glu	Tyr	Pro	Thr	Glu	Ile	Ile	Asn	Pro	Lys	Ile	Cys
465					470					475					480
Ser	Glu	Arg	Thr	Leu	Lys	Gln	Ile	Gln	Glu	Ile	Leu	Tyr	Lys	Val	Val
				485					490					495	
His	Glu	Gly	Leu	Ala	Ala	Pro	Ala	Gly	Ser	Lys	Gln	Phe	Ala	Val	Ser
			500					505					510		
Gly	Lys	Thr	Gly	Thr	Ala	Gln	Ile	Ser	Gln	Gly	Ala	Ala	Gly	Tyr	Lys
		515					520					525			
Ser	Gly	Arg	Val	Asn	Tyr	Leu	Val	Ser	Phe	Cys	Gly	Tyr	Phe	Pro	Ser
	530					535					540				
Glu	Ala	Pro	Lys	Tyr	Ser	Cys	Ile	Val	Ser	Ile	Gln	Lys	Pro	Gly	Leu
545					550					555					560
Pro	Ala	Ser	Gly	Gly	Leu	Met	Ala	Gly	Ser	Val	Phe	Ser	Lys	Ile	Ala
				565					570					575	
Glu	Arg	Val	Tyr	Ala	Lys	Asp	Leu	Arg	Leu	Asp	Ile	Arg	Asn	Ala	Ile
			580					585					590		
Asp	Thr	Asn	Thr	Val	Val	Ile	Pro	Asp	Val	Lys	Ala	Gly	Glu	Met	Ile

595 600 605
 Glu Ala Arg Gln Val Leu Glu Gly Leu Asn Ile Gln Thr Gln Ala Glu
 610 615 620
 Phe Lys Ala Lys Lys Asn Lys Glu Val Trp Gly His Ala Gln Ala Ala
 625 630 635 640
 Pro Lys Ala Val Ile Leu Gln Gly Lys Glu Gln Leu Arg Asn Phe Val
 645 650 655
 Pro Ser Val Ile Gly Met Gly Ala Lys Asp Ala Val Tyr Leu Leu Glu
 660 665 670
 Ser Lys Gly Leu Lys Val Thr Leu Ser Gly Val Gly Lys Val Lys Ser
 675 680 685
 Gln Ser Leu Pro Gln Gly Thr Thr Ile Lys Lys Gly Gln Thr Ile Ser
 690 695 700
 Ile His Leu Asn
 705

<210> 6576

<211> 376

<212> PRT

<213> B.fragilis

<400> 6576

Ala Pro Asp Val Ile Gln Ser Lys Ser Val Asn Arg Leu Thr Val Asn
 1 5 10 15
 Lys Val Met Leu Tyr Tyr Leu Phe Glu Trp Leu His Lys Leu Asn Phe
 20 25 30
 Pro Gly Ala Gly Met Phe Gly Tyr Thr Ser Phe Arg Ala Leu Met Ala
 35 40 45
 Ile Ile Leu Ala Leu Leu Ile Ser Ser Ile Trp Gly Asp Lys Phe Ile
 50 55 60
 Asn Leu Leu Lys Arg Lys Gln Ile Thr Glu Thr Gln Arg Asp Ala Lys
 65 70 75 80
 Ile Asp Pro Phe Gly Val Asn Lys Val Gly Val Pro Ser Met Gly Gly
 85 90 95
 Val Ile Ile Ile Val Ala Ile Leu Ile Pro Cys Leu Leu Leu Gly Lys
 100 105 110
 Leu His Asn Ile Tyr Met Ile Leu Met Leu Ile Thr Thr Val Trp Leu
 115 120 125
 Gly Ser Leu Gly Phe Ala Asp Tyr Ile Lys Ile Phe Lys Lys Asp
 130 135 140
 Lys Glu Gly Leu His Gly Lys Phe Lys Ile Ile Gly Gln Val Gly Leu
 145 150 155 160
 Gly Leu Ile Val Gly Leu Thr Leu Tyr Leu Ser Pro Asp Val Val Ile
 165 170 175
 Arg Glu Asn Ile Glu Val Gln Lys Ser Glu Asn Glu Ile Glu Val Ile
 180 185 190
 His Gly Thr His Asp Leu Lys Ser Thr Gln Thr Thr Ile Pro Val Phe
 195 200 205
 Lys Ser Asn Asn Leu Glu Tyr Ala Asp Leu Val Gly Phe Met Gly Glu
 210 215 220
 His Ala Gln Thr Ala Gly Trp Ile Leu Phe Val Ile Ile Thr Ile Phe
 225 230 235 240
 Val Val Thr Ala Val Ser Asn Gly Ala Asn Leu Asn Asp Gly Met Asp
 245 250 255
 Gly Met Ala Ala Gly Asn Ser Ala Ile Gly Leu Thr Leu Gly Ile
 260 265 270
 Leu Ala Tyr Val Ser Ser His Ile Glu Phe Ala Gly Tyr Leu Asn Ile
 275 280 285
 Met Tyr Ile Pro Gly Ser Glu Glu Leu Val Ile Phe Ile Cys Ala Phe

290	Ile Gly Ala Leu	295	Ile Gly Phe Leu Trp Tyr Asn Ala Tyr Pro Ala Gln	300
305	Val Phe Met Gly	310	Asp Thr Gly Ser Leu Thr Ile Gly Gly Ile Ile Ala	320
		325		330
Val Phe Ala Ile	Ile Ile His Lys Glu Leu Leu Ile Pro Ile Leu Cys	340		350
		345		
Gly Ile Phe Leu Val Glu Asn Arg His Ala Ile Gly Ile Thr Ser Ile		360		365
		375		
Ile Lys Pro Glu Lys Glu Arg Val				
370				

<210> 6577
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 6577	Asn Arg Leu Val Glu Met Ala Asn His Lys Ser Ser Ile Lys Arg Ile
1	5 10 15
Arg Gln Glu Glu Thr Arg Arg Leu Arg Asn Arg Tyr Tyr Gly Lys Thr	
	20 25 30
Met Arg Asn Ala Val Arg Lys Leu Arg Ser Thr Thr Asp Lys Ala Glu	
	35 40 45
Ala Thr Ala Met Tyr Pro Gly Ile Val Lys Met Val Asp Lys Leu Ala	
	50 55 60
Lys Thr Asn Val Ile His Lys Asn Lys Ala Asn Asn Leu Lys Ser Lys	
65	70 75 80
Leu Ala Ile Tyr Ile Asn Lys Leu Ala	
	85

<210> 6578
 <211> 286
 <212> PRT
 <213> B.fragilis

<400> 6578	Lys Arg Thr Val Asn Phe Ala Gln Ser Phe His Leu Lys Arg Met Ala
1	5 10 15
Asp Asp Ser Leu Phe Leu Ile Asp Ile Asp Lys Ile Leu Gln Thr Lys	
	20 25 30
Ala Pro Lys His Tyr Lys Tyr Ile Pro Lys Phe Val Val Ser Tyr Leu	
	35 40 45
Lys Arg Ile Val His Gln Glu Glu Leu Asn Val Phe Leu Arg Asp Ser	
	50 55 60
Lys Asp Lys Val Gly Val Asp Phe Leu Gly Ala Cys Leu Glu Phe Leu	
65	70 75 80
Asp Ala Lys Leu Glu Val Lys Gly Leu Glu Asn Ile Pro Lys Asp Gly	
	85 90 95
Leu Tyr Thr Phe Val Ser Asn His Pro Leu Gly Gly Gln Asp Gly Val	
	100 105 110
Ser Leu Gly Tyr Ile Leu Gly Arg His Phe Asp Gly Lys Val Lys Tyr	
	115 120 125
Leu Val Asn Asp Leu Leu Met Asn Leu His Gly Leu Ala Pro Leu Cys	
	130 135 140
Ile Pro Ile Asn Lys Thr Gly Lys Gln Ala Lys Asp Phe Pro Lys Met	
145	150 155 160
Val Glu Ala Gly Phe Lys Ser Asp Asp Gln Leu Ile Met Phe Pro Ala	
	165 170 175

Gly Leu Cys Ser Arg Arg Gln Asn Gly Val Ile Arg Asp Leu Asp Trp
 180 185 190
 Lys Lys Thr Phe Ile Val Lys Ser Val Gln Phe Gln Arg Asp Val Ile
 195 200 205
 Pro Val His Phe Glu Gly Arg Asn Ser Asp Phe Phe Tyr Asn Leu Ala
 210 215 220
 Asn Leu Cys Lys Ala Leu Gly Ile Lys Phe Asn Ile Ala Met Leu Tyr
 225 230 235 240
 Leu Ala Asp Glu Met Leu Lys Asn Arg His Lys Thr Phe Thr Val Thr
 245 250 255
 Phe Gly Lys Pro Ile Pro Trp Gln Thr Phe Asp Lys Ser Lys Thr Pro
 260 265 270
 Ala Glu Trp Ala Gln Tyr Val Lys Asp Ile Val Tyr Lys Leu
 275 280 285

<210> 6579
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 6579
 Cys Phe His Ser Ser Gly Pro Val Phe Val Leu Arg Leu Phe Ser Val
 1 5 10 15
 Leu Leu Val Pro Leu Pro Val Arg Val Thr Phe Pro Gly Val Thr Leu
 20 25 30
 Leu Leu Ser Arg Glu Ala Glu Leu Ser Leu Trp Asp Thr Pro Leu Leu
 35 40 45
 Thr Ser Ser Leu Arg Pro Glu Leu Glu Arg Met Val Thr Asp Pro Lys
 50 55 60
 Ser Glu Arg Arg Cys Val Leu
 65 70

<210> 6580
 <211> 115
 <212> PRT
 <213> B.fragilis

<400> 6580
 Gly Ser Gly Ser Phe Ser Pro Val Val Lys Thr Ala Glu Leu Asp Ser
 1 5 10 15
 Thr Thr Val Val Arg Phe Asn Gln Met Gln Phe His Pro Tyr Leu Lys
 20 25 30
 Ala Glu Lys Lys Lys Gln Gln Trp His Phe Thr Ala Ala Val Asp Lys
 35 40 45
 Pro Trp Phe Pro Ala Asp Gln Leu Phe Gly Ser Leu Pro Lys Gly Leu
 50 55 60
 Phe Ser Asn Leu Glu Gly Ile Lys Thr Ser Gly Glu Leu Ala Tyr His
 65 70 75 80
 Phe Phe Leu Asp Ala Asn Phe Ala Leu Leu Asn Ser Leu Lys Met Glu
 85 90 95
 Ile Glu Pro Glu Gly Lys Glu Phe Pro His Gly Lys Leu Arg Gly His
 100 105 110
 Lys Ser Gly
 115

<210> 6581
 <211> 281
 <212> PRT
 <213> B.fragilis

<400> 6581

Arg Val Lys Ser Pro Val Pro Leu Leu Asn Pro Gly Gly Tyr Gln Thr
 1 5 10 15
 Asn Arg Val Gly Leu Leu Phe Leu Leu His Asn Lys Ile Thr Tyr Lys
 20 25 30
 Ile Ser Ala Leu Met Lys Met Ala Leu Ser Asp Phe Ala Leu Arg Lys
 35 40 45
 Lys Gly Ile Tyr Gly Ile Leu His Val Ile Ile Leu Leu Ser Leu
 50 55 60
 Phe Leu Val Ile Ser Ile Ser Ile Asp Thr Phe Lys Gly Ile Pro Phe
 65 70 75 80
 Tyr Thr Gln Ser Val Tyr Met Lys Val Gln Leu Trp Ile Cys Val Leu
 85 90 95
 Phe Leu Phe Asp Phe Ile Leu Glu Leu Phe Leu Ser Lys Asn Lys Trp
 100 105 110
 His Tyr Leu Ser Thr His Phe Ile Phe Leu Leu Val Ala Ile Pro Tyr
 115 120 125
 Gln Asn Ile Ile Ser Tyr Met Gly Trp Thr Phe Ser Pro Glu Val Thr
 130 135 140
 Tyr Met Ile Arg Phe Val Pro Leu Val Arg Gly Gly Tyr Ala Met Ala
 145 150 155 160
 Ile Val Val Gly Trp Leu Thr Tyr Asn Lys Ala Ser Gly Leu Phe Val
 165 170 175
 Ser Tyr Leu Thr Met Leu Leu Ala Thr Val Tyr Phe Ser Ser Leu Ala
 180 185 190
 Phe Phe Val Leu Glu His Lys Val Asn Pro Leu Val Thr Gly Tyr Gly
 195 200 205
 Asp Ala Leu Trp Trp Ala Phe Met Asp Val Thr Thr Val Gly Ser Asn
 210 215 220
 Ile Ile Ala Val Thr Val Thr Gly Arg Val Leu Ser Val Leu Leu Ala
 225 230 235 240
 Ala Leu Gly Met Met Met Phe Pro Ile Phe Thr Val Tyr Val Thr Ser
 245 250 255
 Leu Ile Gln Lys Lys Asn Lys Glu Lys Glu Glu Tyr Tyr Lys Gln Leu
 260 265 270
 Glu Ala Ala Asp Glu Ser Lys Pro Lys
 275 280

<210> 6582

<211> 325

<212> PRT

<213> B.fragilis

<400> 6582

Gln Leu Leu Pro Leu Asp Trp Glu Ile Arg Cys Lys Asp Arg Phe Leu
 1 5 10 15
 Pro Val Gly Cys Asn Ala Ser Cys Ile Phe Leu Leu Ser Ser Phe Arg
 20 25 30
 Leu Ile Ala Ile Leu Phe Val Leu Leu His Pro Lys Ile Arg Arg Met
 35 40 45
 Asn His Val Thr Thr Tyr Ile Arg Gln Ala Leu His Asp Ile Tyr Pro
 50 55 60
 Pro Gly Glu Leu Arg Ser Leu Thr Lys Ile Ile Cys Cys Asp Leu Leu
 65 70 75 80
 Gly Gln Asp Ala Ile Asp Tyr Tyr Leu Gly Lys Asp Ile Thr Leu Ser
 85 90 95
 Ala Asn Glu Gln Cys Asp Leu Glu Ser Ile Val Glu Arg Leu Lys Lys
 100 105 110

Asn Glu Pro Ile Gln Tyr Ile Gln Gly Glu Thr Cys Phe Tyr Gly Ser
 115 120 125
 Met Phe Arg Val Ala Pro Gly Val Leu Ile Pro Arg Pro Glu Thr Glu
 130 135 140
 Glu Leu Val Asp Leu Val Val Lys Glu Ala Ala Thr Gly Thr Arg Leu
 145 150 155 160
 Leu Asp Ile Gly Thr Gly Ser Gly Cys Ile Ala Ile Ser Leu Ala Lys
 165 170 175
 His Ile Pro Gln Ala Val Val Thr Ala Trp Asp Val Ser Glu Ala Ala
 180 185 190
 Leu Ala Ile Ala Gly Glu Asn Asn Arg Glu Leu Lys Ala Gly Val His
 195 200 205
 Phe Glu Lys Met Asp Val Leu Ser Ala Glu Pro Val Gly Asp Asp Gln
 210 215 220
 Tyr Asp Met Ile Val Ser Asn Pro Pro Tyr Val Thr Glu Ser Glu Lys
 225 230 235 240
 Asn Glu Met Glu Pro Asn Val Leu Asp Trp Glu Pro Arg Leu Ala Leu
 245 250 255
 Phe Val Pro Asp Asn Asp Pro Leu Arg Phe Tyr Arg Arg Ile Ala Ser
 260 265 270
 Leu Gly Arg Lys Met Leu Arg Leu His Gly Arg Leu Tyr Phe Glu Ile
 275 280 285
 Asn Arg Ala Tyr Gly Glu Glu Val Leu Gln Met Leu His Glu Gln Gly
 290 295 300
 Tyr Glu Glu Leu Arg Leu Ile Lys Asp Ile Ser Gly Asn Asp Arg Ile
 305 310 315 320
 Val Thr Ala Lys Arg
 325

<210> 6583

<211> 191

<212> PRT

<213> B.fragilis

<400> 6583

Ser Leu Asn Thr Lys Ile Asp Met Asp Asp Gln Ile Lys Gln Ile Ala
 1 5 10 15
 Glu Arg Leu Arg Gly Leu Arg Asp Val Leu Glu Leu Thr Ala Glu Asp
 20 25 30
 Ile Ala Arg Asp Cys Glu Ile Ser Ala Glu Glu Tyr Arg Leu Ala Glu
 35 40 45
 Thr Gly Asp Tyr Asp Ile Ser Val Ser Met Leu Gln Lys Ile Ala Arg
 50 55 60
 Lys Tyr Gly Ile Ala Leu Asp Ala Leu Met Phe Gly Glu Glu Pro Lys
 65 70 75 80
 Met Ser Ser Tyr Phe Leu Thr Arg Ala Gly Lys Gly Thr Ser Ile Glu
 85 90 95
 Arg Thr Lys Ala Tyr Lys Tyr Gln Ser Leu Ala Ala Gly Phe Met Asn
 100 105 110
 Arg Asn Ala Asp Pro Phe Ile Val Thr Val Glu Pro Lys Pro Asp Ile
 115 120 125
 Glu Pro Ile His Tyr Asn Ser His Ser Gly Gln Glu Phe Asn Leu Val
 130 135 140
 Leu Glu Gly Arg Met Met Ile Ser Ile Asp Gly Lys Asp Leu Ile Leu
 145 150 155 160
 Asn Glu Gly Asp Ser Leu Tyr Phe Asn Ser Lys Leu Pro His Gly Met
 165 170 175
 Lys Ala Leu Asp Gly Lys Thr Val Arg Phe Leu Ala Val Ile Met
 180 185 190

<210> 6584
 <211> 62
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (56), (57), (58)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6584
 Tyr Gly Val Thr Val Val Pro Thr Lys Tyr Gly Ala Asp Asp Ser Ile
 1 5 10 15
 Asn Leu Val Leu Lys Asp Arg Thr Thr Thr Asn Glu Met Ser Tyr Lys
 20 25 30
 Glu Gln Ile Asp Leu Asn Arg Ile Pro Lys His Val Val Val Thr Ala
 35 40 45
 Glu Cys Asn Ala Cys Ser Ile Xaa Xaa Xaa Pro Ala Ser Pro
 50 55 60

<210> 6585
 <211> 308
 <212> PRT
 <213> B.fragilis

<400> 6585
 Gln Ala Asp Ala Ala Ile Cys Phe Ser Ala Ala Asn His Ser Tyr Val
 1 5 10 15
 Cys Phe Leu Phe Ile Phe Ala Val Asn Arg Met Lys Ile Met Ser Ile
 20 25 30
 Glu Leu Gly Lys Phe Asn Gln Leu Glu Val Val Lys Gln Val Asp Phe
 35 40 45
 Gly Met Tyr Leu Asp Gly Gly Glu Glu Gly Glu Ile Leu Leu Pro Thr
 50 55 60
 Arg Tyr Val Pro Glu Asp Cys Lys Leu Gly Asp Trp Leu Asn Val Phe
 65 70 75 80
 Leu Tyr Leu Asp Asn Glu Glu Arg Leu Ile Ala Thr Thr Leu Thr Pro
 85 90 95
 Leu Val Gln Val Gly Glu Phe Ala Cys Leu Glu Val Ser Trp Val Asn
 100 105 110
 Gln Phe Gly Ala Phe Leu Asn Trp Gly Leu Met Lys Asp Leu Phe Val
 115 120 125
 Pro Phe Ser Glu Gln Lys Met Lys Met Gln Val Gly Asn Lys Tyr Val
 130 135 140
 Ile His Ala His Ile Asp Asp Glu Ser Phe Arg Ile Val Ala Ser Ala
 145 150 155 160
 Lys Val Asp Arg Tyr Leu Ser Lys Glu Lys Ala Ser Tyr Gln Pro Gly
 165 170 175
 Glu Glu Val Asn Ile Leu Ile Trp Gln Lys Thr Asp Leu Gly Phe Lys
 180 185 190
 Ala Ile Ile Glu Asn Met Tyr Ser Gly Leu Leu Tyr Asp Ser Glu Ile
 195 200 205
 Phe Gln Thr Leu His Thr Gly Asp Val Leu Lys Ala Tyr Val Lys Gln
 210 215 220
 Val Arg Glu Asp Gly Lys Ile Asp Leu Ile Leu Gln Lys Pro Gly Phe
 225 230 235 240
 Glu Lys Ile Asp Asp Phe Ser Lys Thr Leu His Arg Tyr Ile Thr Glu
 245 250 255

His Gly Gly Trp Ile Gly Leu Thr Asp Lys Ser Pro Ala Glu Glu Ile
 260 265 270
 Tyr Asp Thr Phe Gly Val Ser Lys Lys Thr Phe Lys Lys Ala Val Gly
 275 280 285
 Asp Leu Tyr Lys Lys Arg Leu Ile Leu Leu His Glu Asp Gly Ile Glu
 290 295 300
 Leu Val Arg Pro
 305

<210> 6586
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 6586
 Ser Cys Pro Ala Ala Asp Tyr Pro His Arg Cys Arg Val Ile Phe Thr
 1 5 10 15
 Trp Asn Gly Lys Gln Tyr Ala Ala Tyr Thr Phe Val Phe His Ser His
 20 25 30
 Phe Asp Arg Cys Gly Phe Gln Glu Ala Phe Asp Thr Cys Tyr Phe Pro
 35 40 45
 Trp Thr Ala Arg Glu His Phe Asn Leu Arg Asn Leu Ser Ala Tyr Tyr
 50 55 60
 His Leu Leu Leu Ile Val
 65 70

<210> 6587
 <211> 457
 <212> PRT
 <213> B.fragilis

<400> 6587
 Tyr Val Ile Tyr Asp Thr Ile Leu Ile Ala Met Ala Gln Lys Leu Trp
 1 5 10 15
 Glu Lys Ser Val Glu Val Asn Lys Asp Ile Glu Arg Phe Thr Val Gly
 20 25 30
 Arg Asp Arg Glu Met Asp Leu Tyr Leu Ala Lys His Asp Val Leu Gly
 35 40 45
 Ser Met Ala His Ile Thr Met Leu Glu Ser Ile Gly Leu Leu Thr Lys
 50 55 60
 Glu Glu Leu Ala Gln Leu Leu Thr Glu Leu Lys Asp Ile Tyr Ala Ser
 65 70 75 80
 Ala Glu Arg Gly Glu Phe Val Ile Glu Glu Gly Val Glu Asp Val His
 85 90 95
 Ser Gln Val Glu Leu Met Leu Thr Arg Arg Leu Gly Asp Val Gly Lys
 100 105 110
 Lys Ile His Ser Gly Arg Ser Arg Asn Asp Gln Val Leu Leu Asp Leu
 115 120 125
 Lys Leu Phe Thr Arg Thr Gln Ile Arg Glu Val Ala Glu Ala Val Glu
 130 135 140
 Gln Leu Phe His Val Leu Ile Arg Gln Ser Glu Arg Tyr Lys Asn Val
 145 150 155 160
 Leu Met Pro Gly Tyr Thr His Leu Gln Ile Ala Met Pro Ser Ser Phe
 165 170 175
 Gly Leu Trp Phe Gly Ala Tyr Ala Glu Ser Leu Val Asp Asp Met Leu
 180 185 190
 Phe Leu Gln Ala Ala Phe Lys Met Cys Asn Lys Asn Pro Leu Gly Ser
 195 200 205
 Ala Ala Gly Tyr Gly Ser Ser Phe Pro Leu Asn Arg Thr Met Thr Thr

210	215	220
Glu Leu Leu Gly Phe Asp Ser Leu Asn Tyr Asn Val Val Tyr Ala Gln		
225	230	235
Met Gly Arg Gly Lys Met Glu Arg Asn Val Ala Phe Ala Leu Ala Thr		240
	245	250
Leu Ala Gly Thr Ile Ser Lys Leu Ala Phe Asp Ala Cys Met Phe Asn		255
	260	265
Ser Gln Asn Phe Gly Phe Val Lys Leu Pro Asp Glu Cys Thr Thr Gly		270
	275	280
Ser Ser Ile Met Pro His Lys Lys Asn Pro Asp Val Phe Glu Leu Thr		285
	290	295
Arg Ala Lys Cys Asn Lys Leu Gln Ser Leu Pro Gln Gln Ile Met Met		300
305	310	315
Ile Ala Asn Asn Leu Pro Ser Gly Tyr Phe Arg Asp Leu Gln Ile Ile		320
	325	330
Lys Glu Val Phe Leu Pro Ala Phe Gln Glu Leu Lys Asp Cys Leu Gln		335
	340	345
Met Thr Thr Tyr Ile Met Asn Glu Ile Lys Val Asn Glu His Ile Leu		350
	355	360
Asp Asp Asp Lys Tyr Leu Phe Ile Phe Ser Val Glu Glu Val Asn Arg		365
370	375	380
Leu Ala Arg Glu Gly Met Pro Phe Arg Asp Ala Tyr Lys Lys Val Gly		385
385	390	395
Leu Asp Ile Glu Ala Gly His Phe Ser His Asp Lys Gln Val His His		400
	405	410
Thr His Glu Gly Ser Ile Gly Asn Leu Cys Asn Asp Glu Ile Ser Ala		415
	420	425
Leu Met Gln Arg Thr Ile Glu Gly Phe Asn Phe Gln Gly Met Glu Gln		430
	435	440
Ala Glu Lys Thr Leu Leu Gly Arg Lys		445
450	455	

<210> 6588

<211> 161

<212> PRT

<213> B.fragilis

<400> 6588

Ser Asn Cys Asn Arg Gln Thr Met Asn Thr Ile Thr Glu Glu Glu Ala		
1	5	10
Leu Asn Arg Met Ala Ala Tyr Cys Ser Ala Ala Glu His Cys Lys Ala		15
	20	25
Glu Val Asn Glu Lys Leu Gln Lys Trp Gly Leu Pro Tyr Glu Val Ile		30
	35	40
Asn Arg Ile Ile Asp Arg Leu Val Val Glu Lys Phe Ile Asp Glu Glu		45
50	55	60
Arg Tyr Cys Arg Ala Phe Val Asn Asp Lys Phe Arg Phe Ala Lys Trp		65
65	70	75
Gly Lys Met Lys Ile Thr Gln Ala Leu Tyr Met Lys Lys Ile Pro Arg		80
	85	90
Glu Val Thr Tyr Arg Tyr Leu Asn Asp Ile Asp Arg Glu Glu Tyr Leu		95
	100	105
Ala Ile Leu Gly Asp Leu Ile Ala Lys Arg Lys Ser Ile His Ala		110
	115	120
Lys Asp Glu Phe Glu Leu Asn Gly Lys Leu Ile Arg Phe Ala Met Ser		125
	130	135
Arg Gly Phe Glu Met Asp Asp Ile Arg Arg Cys Val Gln Val Glu Glu		140
145	150	155
Glu		160

<210> 6589
 <211> 415
 <212> PRT
 <213> B.fragilis

<400> 6589

Lys Lys Asn Lys Lys Glu Ile Thr Phe Lys Ile Tyr Ser Thr Met Glu
 1 5 10 15
 Gln Lys Lys Lys Val Val Val Ala Phe Ser Gly Gly Leu Asp Thr Ser
 20 25 30
 Phe Thr Val Met Tyr Leu Ala Lys Glu Lys Gly Tyr Glu Val Tyr Ala
 35 40 45
 Ala Cys Ala Asn Thr Gly Gly Phe Ser Glu Glu Gln Leu Lys Gln Asn
 50 55 60
 Glu Glu Asn Ala Tyr Lys Leu Gly Ala Val Lys Tyr Val Thr Leu Asp
 65 70 75 80
 Val Thr Gln Glu Tyr Tyr Glu Lys Ser Leu Lys Tyr Met Ile Phe Gly
 85 90 95
 Asn Val Leu Arg Asn Gly Thr Tyr Pro Ile Ser Val Ser Ser Glu Arg
 100 105 110
 Ile Phe Gln Ala Leu Ala Ile Ala Arg Tyr Ala Lys Glu Ile Gly Ala
 115 120 125
 Glu Ala Ile Ala His Gly Ser Thr Gly Ala Gly Asn Asp Gln Ile Arg
 130 135 140
 Phe Asp Met Thr Phe Leu Val Met Thr Pro Gly Val Glu Ile Ile Thr
 145 150 155 160
 Leu Thr Arg Asp Met Ala Leu Ser Arg Gln Glu Glu Ile Asp Tyr Leu
 165 170 175
 Asn Lys Asn Gly Phe Glu Ala Asp Phe Thr Lys Leu Lys Tyr Ser Tyr
 180 185 190
 Asn Val Gly Leu Trp Gly Thr Ser Ile Cys Gly Gly Glu Ile Leu Asp
 195 200 205
 Ser Ala Gln Gly Leu Pro Glu Thr Ala Tyr Leu Lys Gln Val Thr Lys
 210 215 220
 Glu Gly Ser Glu Leu Leu Arg Leu Glu Phe Lys Asn Gly Glu Leu His
 225 230 235 240
 Ala Val Asn Gly Glu Val Phe Glu Asp Lys Ile Ala Ala Ile Gln Lys
 245 250 255
 Val Glu Glu Ile Gly Ala Ala Tyr Gly Ile Gly Arg Asp Met His Val
 260 265 270
 Gly Asp Thr Ile Ile Gly Ile Lys Gly Arg Val Gly Phe Glu Ala Ala
 275 280 285
 Ala Pro Met Leu Ile Ile Gly Ala His Arg Phe Leu Glu Lys Tyr Thr
 290 295 300
 Leu Ser Lys Trp Gln Gln Tyr Trp Lys Asp Gln Val Ala Asn Trp Tyr
 305 310 315 320
 Gly Met Phe Leu His Glu Ser Gln Tyr Leu Glu Pro Val Met Arg Asp
 325 330 335
 Ile Glu Ala Met Leu Gln Glu Ser Gln Arg Asn Val Asn Gly Thr Ala
 340 345 350
 Ile Leu Glu Leu Arg Pro Leu Ser Phe Ser Thr Val Gly Val Glu Ser
 355 360 365
 Gln Asp Asp Leu Val Lys Thr Lys Phe Gly Glu Tyr Gly Glu Met Gln
 370 375 380
 Lys Gly Trp Thr Ala Glu Asp Ala Lys Gly Phe Ile Lys Val Thr Ser
 385 390 395 400
 Thr Pro Leu Arg Val Tyr Tyr Ala Asn His Lys Asp Glu Glu Val

CCPDB

<210> 6590
 <211> 166
 <212> PRT
 <213> B.fragilis

<400> 6590

Gly	Phe	Ser	Lys	Gly	Ile	Tyr	Gln	Tyr	Asp	Glu	Arg	Ile	Gly	Ile	Glu
1				5					10					15	
Cys	Phe	Cys	Asp	Gly	Ala	Arg	Ile	Arg	Phe	Ala	Pro	Asp	Leu	Leu	Leu
			20					25					30		
Glu	Asn	Met	Lys	Thr	Leu	Ile	Lys	Thr	Ala	Gly	Thr	Asn	Phe	Leu	Ile
		35					40					45			
Ile	Asp	Gly	His	His	Cys	Thr	Glu	Lys	Thr	Ala	Val	Ile	Glu	Thr	Val
	50					55					60				
Asn	Ser	Met	Met	Leu	Gln	Thr	Val	Glu	Gly	Val	Ile	Tyr	Leu	Phe	Pro
65					70					75					80
Cys	Trp	Thr	Gln	Thr	Pro	Ala	Ala	Phe	Thr	Arg	Leu	Arg	Ala	Lys	Gly
				85					90					95	
Ala	Phe	Leu	Val	Ser	Ala	Asp	Tyr	Asp	Gly	Thr	Ser	Val	Gly	Gly	Leu
			100					105					110		
Lys	Ile	Phe	Ser	Glu	Lys	Gly	Gly	Ile	Cys	Arg	Leu	Ser	Asn	Pro	Trp
		115					120						125		
Arg	Gly	Arg	Lys	Leu	Arg	Val	Thr	Glu	Asn	Gly	Lys	Pro	Val	Ser	Val
	130					135					140				
Lys	Glu	Gln	Asn	Asn	Val	Cys	Ser	Phe	Ile	Thr	Arg	Lys	Gly	Ser	Thr
145					150					155					160
Tyr	Thr	Ile	Val	Gly	Leu										
				165											

<210> 6591
 <211> 533
 <212> PRT
 <213> B.fragilis

<400> 6591

Leu	Met	Ala	Asn	Ile	Lys	Gln	Ala	Val	Lys	Leu	Gly	Val	Phe	Thr	Leu
1				5					10					15	
Ala	Ile	Met	Asn	Val	Thr	Ala	Val	Val	Ser	Leu	Arg	Gly	Leu	Pro	Ala
			20					25					30		
Glu	Ala	Val	Tyr	Gly	Met	Ser	Ser	Ala	Phe	Tyr	Tyr	Leu	Phe	Ala	Ala
		35					40					45			
Ile	Val	Phe	Leu	Ile	Pro	Thr	Ser	Leu	Val	Ala	Ala	Glu	Leu	Ala	Ala
	50					55					60				
Met	Phe	Gln	Asp	Lys	Gln	Gly	Gly	Val	Phe	Arg	Trp	Val	Gly	Glu	Ala
65					70					75					80
Tyr	Gly	Lys	Lys	Leu	Gly	Phe	Leu	Ala	Ile	Trp	Val	Gln	Trp	Ile	Glu
				85					90					95	
Ser	Thr	Ile	Trp	Tyr	Pro	Thr	Val	Leu	Thr	Phe	Gly	Ala	Val	Ser	Ile
			100					105					110		
Ala	Phe	Ile	Gly	Met	Asn	Asp	Thr	His	Asp	Met	Thr	Leu	Ala	Ser	Asn
		115					120						125		
Lys	Tyr	Tyr	Thr	Leu	Ala	Val	Val	Leu	Ile	Ile	Tyr	Trp	Leu	Ala	Thr
	130					135					140				
Phe	Ile	Ser	Leu	Lys	Gly	Met	Gly	Trp	Val	Gly	Lys	Val	Ala	Lys	Ile
145					150					155					160
Gly	Gly	Met	Val	Gly	Thr	Ile	Ile	Pro	Ala	Ala	Leu	Leu	Ile	Ile	Leu
				165					170					175	

Gly Ile Val Tyr Leu Ala Ser Gly Gly His Ser Asn Leu Asp Phe His
 180 185 190
 Ser Ser Phe Phe Pro Asp Leu Thr Asn Phe Asp Asn Val Val Leu Ala
 195 200 205
 Ala Ser Ile Phe Leu Phe Tyr Ala Gly Met Glu Met Gly Gly Ile His
 210 215 220
 Val Lys Asp Met Gln Asn Pro Ser Lys Asn Tyr Pro Lys Ala Val Phe
 225 230 235 240
 Ile Gly Ala Leu Ile Thr Val Ile Ile Phe Val Leu Gly Thr Phe Ser
 245 250 255
 Leu Gly Ile Ile Ile Pro Ala Lys Asp Ile Ser Leu Thr Gln Ser Leu
 260 265 270
 Leu Val Gly Phe Asp Asn Tyr Phe Arg Tyr Ile His Ala Ser Trp Leu
 275 280 285
 Ser Pro Ile Ile Ala Ile Ala Leu Ala Phe Gly Val Leu Ala Gly Val
 290 295 300
 Leu Thr Trp Val Ala Gly Pro Ser Lys Gly Ile Phe Ala Val Gly Lys
 305 310 315 320
 Ala Gly Tyr Met Pro Pro Phe Phe Gln Lys Thr Asn Lys Leu Gly Val
 325 330 335
 Gln Lys Asn Ile Leu Phe Val Gln Gly Ala Val Thr Val Leu Ser
 340 345 350
 Leu Leu Phe Val Val Met Pro Ser Val Gln Ser Phe Tyr Gln Ile Leu
 355 360 365
 Ser Gln Leu Thr Val Ile Leu Tyr Leu Val Met Tyr Leu Leu Met Phe
 370 375 380
 Ser Gly Ala Ile Tyr Leu Arg Tyr Asn Met Lys Lys Ala Asn Arg Pro
 385 390 395 400
 Phe Arg Ile Gly Lys Lys Gly Asn Gly Leu Met Trp Ile Val Gly Gly
 405 410 415
 Leu Gly Phe Leu Gly Ser Leu Leu Ala Phe Ile Leu Ser Phe Ile Pro
 420 425 430
 Pro Ser Gln Ile Ser Thr Gly Ser Asn Thr Val Trp Phe Ser Val Leu
 435 440 445
 Ile Ile Gly Ala Leu Val Val Ile Ala Pro Phe Ile Ile Tyr Ala
 450 455 460
 Ala Lys Lys Pro Ser Trp Ala Asp Pro Asn Ser Thr Phe Glu Pro Phe
 465 470 475 480
 His Trp Glu Thr Gln Ala Lys Pro Gln Val Ala Pro Ala Thr Thr Thr
 485 490 495
 Thr Ala Gly Pro Ala Thr Ser Ser Ala Thr Thr Ile Gly Ser Thr Thr
 500 505 510
 Ser Ala Pro Ser Thr Gly Ser Gly Ser Val Ser Ser Asp Lys Asp Thr
 515 520 525
 Pro Gln Lys Gln Ser
 530

<210> 6592
 <211> 188
 <212> PRT
 <213> B.fragilis

<400> 6592
 Met Gln Ser Glu Asp Gly Ala Phe Tyr Phe His Arg Gly Phe Leu Pro
 1 5 10 15
 Glu Ala Met Arg Lys Ala Leu Tyr Gln Asp Leu Lys Val Lys Arg Phe
 20 25 30
 Ala Arg Gly Gly Ser Thr Ile Thr Met Gln Leu Val Lys Ser Val Phe
 35 40 45

Leu Ser Arg Asn Lys Asn Ile Ala Arg Lys Leu Glu Glu Ala Leu Ile
 50 55 60
 Val Trp Leu Ile Glu Thr Glu Arg Leu Thr Ser Lys Glu Arg Met Tyr
 65 70 75 80
 Glu Val Tyr Leu Asn Ile Val Glu Trp Gly Pro Leu Val Tyr Gly Val
 85 90 95
 Gln Glu Ala Ala Thr Tyr Tyr Phe Lys Lys Arg Pro Ser Gln Leu Thr
 100 105 110
 Ala Glu Glu Ser Ile Phe Leu Ala Ser Ile Ile Pro Lys Pro Lys His
 115 120 125
 Phe Arg Asn Ser Phe Asn Asn Asp Met Gln Leu Lys Glu Ser Leu Glu
 130 135 140
 Gly Tyr Tyr Arg Leu Ile Thr Glu Arg Leu Val Lys Lys Gly Ile Ile
 145 150 155 160
 Ser Glu Val Ala Ala Asp Ser Ile Arg Pro Glu Ile Asn Val Thr Gly
 165 170 175
 Glu Ala Lys Lys Asp Leu Gln Arg Asp Ser Ile Gln
 180 185

<210> 6593

<211> 221

<212> PRT

<213> B.fragilis

<400> 6593

Lys Leu Asn Asp Met Arg Lys Val Ile Ile Thr Leu Cys Phe Leu Phe
 1 5 10 15
 Val Ala Phe Val Ala Gln Ala Gly Arg Ile Ser Gly Ile Asn Ile Gln
 20 25 30
 Ser Ser Gly Glu Ala Ile Leu Val Phe Val Asp Gly Glu Gln Ile Cys
 35 40 45
 Thr Pro Thr Glu Thr Cys Phe Ile Ala Asn Tyr Ser Gly Arg His Arg
 50 55 60
 Ile Glu Val Tyr Ala Val Arg Tyr Ile Pro Arg Thr Gly Gln Ser Val
 65 70 75 80
 Lys Gly Asp Leu Leu Phe Gln Glu Trp Val Ser Asn Pro Gly Met Asn
 85 90 95
 Ile Arg Asp Ile Arg Val Gly Tyr Asn Asp Arg Pro Asp Phe Cys Pro
 100 105 110
 Asp Arg Pro Val Arg Pro Gly Tyr Asp Val Val Met Asn Arg Thr Glu
 115 120 125
 Phe Asp Arg Phe Leu Arg Ser Val Lys Asp Lys His Phe Asp Ser Asp
 130 135 140
 Arg Asn Lys Leu Ile Glu Thr Thr Leu Val Ser Thr Gly Phe Thr Ser
 145 150 155 160
 Asp Gln Cys Leu Gln Leu Val Asn Leu Phe Ser Phe Asp Ser Glu Lys
 165 170 175
 Ile Lys Leu Met Gln Ala Met Tyr Pro Arg Ile Val Asp Lys Pro Asn
 180 185 190
 Phe Tyr Leu Val Ile Glu Ser Leu Thr Phe Gln Ser Asp Lys Asn Lys
 195 200 205
 Met Asn Glu Phe Val Arg Lys Tyr His Asn Gln Arg Asn
 210 215 220

<210> 6594

<211> 347

<212> PRT

<213> B.fragilis

<400> 6594

Lys Met Lys Glu Glu Lys Tyr Met Arg Arg Cys Ile Gln Leu Ala Lys
 1 5 10 15
 Asn Gly Leu Cys Asn Val Ser Pro Asn Pro Met Val Gly Ala Val Ile
 20 25 30
 Val Cys Glu Gly Gln Ile Ile Gly Glu Gly Tyr His Ile Arg Cys Gly
 35 40 45
 Glu Ala His Ala Glu Val Asn Ala Ile Arg Ser Val Lys Asp Leu Ser
 50 55 60
 Leu Leu Lys His Ser Thr Ile Tyr Val Ser Leu Glu Pro Cys Ser His
 65 70 75 80
 His Gly Lys Thr Pro Pro Cys Ala Asp Leu Ile Ile Glu Lys Gln Ile
 85 90 95
 Pro Arg Ile Val Ile Gly Cys Gln Asp Pro Phe Ser Lys Val Ala Gly
 100 105 110
 Lys Gly Ile Gln Lys Leu Arg Asp Ala Gly Cys Glu Val Ile Val Gly
 115 120 125
 Val Leu Glu Thr Glu Cys Arg Glu Leu Ile Arg Lys Phe Ile Thr Phe
 130 135 140
 His Thr Leu His Arg Pro Tyr Ile Val Leu Lys Trp Ala Glu Ser Ala
 145 150 155 160
 Asp Gly Phe Ile Asp Leu Glu Arg Thr Glu Gly Gln Pro Val Ile Leu
 165 170 175
 Ser Thr Pro Leu Thr Ser Met Leu Val His Lys Lys Arg Ala Glu Ser
 180 185 190
 Asp Ala Ile Met Val Gly Thr Arg Thr Ala Leu Leu Asp Asn Pro Ala
 195 200 205
 Leu Thr Val Arg Asn Trp His Gly His Asn Pro Val Arg Ile Val Met
 210 215 220
 Asp Arg Asn His Ser Leu Pro Gln Thr Ser His Leu Ser Asp Asn Ser
 225 230 235 240
 Val Ser Thr Leu Val Phe Thr Glu His Pro Arg Ala Gly Lys Glu Asn
 245 250 255
 Leu Glu Tyr Ile Thr Leu Asn Tyr Gln Thr Asp Ile Leu Pro Gln Ile
 260 265 270
 Leu Ser Ala Leu Tyr Gln Arg Asn Leu Gln Ser Leu Met Ile Glu Gly
 275 280 285
 Gly Arg Ile Leu Leu Glu Ser Phe Ile Arg Ser Gly Ile Trp Asp Glu
 290 295 300
 Val Ile Ile Glu Lys Ser Asp Lys Leu Leu Tyr Ser Gly Val Lys Ala
 305 310 315 320
 Pro Glu Ile Ser Asp Lys Ile Ser Tyr Ser Glu Glu Lys His Phe Cys
 325 330 335
 Thr Thr Phe Arg His Tyr Leu Lys Arg Asn Thr
 340 345

<210> 6595

<211> 252

<212> PRT

<213> B.fragilis

<400> 6595

Asp Met Lys Arg Ile Leu Ile Phe Phe Leu Val Ile Gly Ile Thr Ala
 1 5 10 15
 Ile Ser Ser Val Ser Met Ala Ala Met Ser Asn Ser Arg Ile Arg Lys
 20 25 30
 Glu Thr Arg Phe Leu Thr Asp Lys Met Ala Tyr Glu Leu Asn Leu Ser
 35 40 45
 Thr Gly Gln Tyr Asn Asp Val Tyr Glu Ile Asn Tyr Asp Phe Ile Tyr

50	55	60
Ser Ile Arg Tyr Leu Met	Asp Asp Val Ile Arg	Gly Glu Glu Trp Ala
65	70	75
Leu Asp Lys Tyr Tyr Arg	Thr Leu Asp Ile Arg	Asn Asp Asp Leu Arg
	85	90
Trp Val Leu Thr Ala Ser	Gln Tyr Arg Phe Ile	Gly Val Asp Tyr
	100	105
Phe Tyr Arg Pro Val Tyr	Ala Ser Gly Gly Ser	Trp Ser Phe Arg Ile
	115	120
Tyr Ile Arg Tyr Thr Asn	His Asn His Phe Tyr	Phe Gly Lys Pro Tyr
	130	135
His Tyr Asn Ser Tyr Cys	Gly Gly His Tyr Arg	Thr His Tyr His Asn
145	150	155
Ser Tyr Tyr Arg Gly Arg	Tyr Arg His Asp Phe	Tyr Ser Gly Ser His
	165	170
Ser Ile Arg Asp His Arg	Asn Tyr Asn Thr His	Arg Arg Ser Asp Phe
	180	185
Gly Ser Val Thr Ile Arg	Ser Asn Ser Gly Arg	Arg Asp Glu Val Arg
	195	200
Arg Gly Val Ser Gln Arg	Glu Ser Ser Ala Ser	Arg Asp Asn Asn Arg
	210	215
Val Thr Pro Gly Asn Val	Thr Arg Thr Gly Arg	Gly Thr Arg Ser Thr
225	230	235
Glu Asn Asn Arg Arg Thr	Asn Thr Gly Pro Glu	Glu
	245	250

<210> 6596
 <211> 163
 <212> PRT
 <213> B.fragilis

<400> 6596

Leu Lys Tyr Arg Lys Lys	Ser His Ser Asp Arg	Ile Cys Ser Asp Cys
1	5	10
Ser Ser Phe Phe Phe	Ile Ser Lys Ile Asn	Lys Met Thr Lys Phe Glu
	20	25
Ser Ser Val Lys Val	Ile Pro Tyr Ser Gln	Glu Arg Val Tyr Glu Lys
	35	40
Leu Ala Asp Leu Ser	Asn Leu Glu Ala Ile	Lys Asp Arg Leu Pro Glu
	50	55
Asp Lys Val Lys Asn	Met Ser Phe Asp Thr	Asp Thr Leu Ser Phe Asn
65	70	75
Val Asp Pro Val Gly	Gln Leu Thr Leu Arg	Ile Ile Glu Arg Glu Pro
	85	90
Ser Lys Cys Ile Lys	Phe Glu Thr Thr Asn	Ser Pro Leu Pro Phe Asn
	100	105
Met Trp Ile Gln Leu	Val Ala Val Ser Glu	Glu Glu Cys Lys Leu Lys
	115	120
Val Thr Ile Gly Leu	Glu Ile Asn Pro Phe	Met Lys Ala Met Val Gln
	130	135
Lys Pro Leu Asn Glu	Gly Leu Glu Lys Met	Ala Asp Met Leu Ser Met
145	150	155
Ile Gln Tyr		160

<210> 6597
 <211> 326
 <212> PRT
 <213> B.fragilis

<400> 6597

Gly Arg Arg Gly Met Ile Lys Ala Gly Ile Ile Gly Gly Ala Gly Tyr
 1 5 10 15
 Thr Ala Gly Glu Leu Ile Arg Leu Leu Ile Asn His Pro Glu Thr Glu
 20 25 30
 Ile Val Phe Ile Asn Ser Thr Ser Asn Ala Gly Asn Lys Ile Thr Asp
 35 40 45
 Val His Glu Gly Leu Tyr Gly Glu Cys Asp Leu Ala Phe Thr Asp Glu
 50 55 60
 Leu Pro Leu Glu Asp Ile Asp Val Leu Phe Phe Cys Thr Ala His Gly
 65 70 75 80
 Asp Thr Lys Lys Phe Met Glu Ser His Asn Ile Pro Glu Glu Leu Lys
 85 90 95
 Ile Ile Asp Leu Ser Met Asp Tyr Arg Ile Ala Ser Pro Asp His Asp
 100 105 110
 Phe Ile Tyr Gly Leu Pro Glu Leu Asn Arg Arg Ala Thr Cys Thr Ala
 115 120 125
 Lys His Val Ala Asn Pro Gly Cys Phe Ala Thr Cys Ile Gln Leu Gly
 130 135 140
 Leu Leu Pro Leu Ala Lys His Leu Met Leu Asn Glu Asp Val Met Val
 145 150 155 160
 Asn Ala Ile Thr Gly Ser Thr Gly Ala Gly Val Lys Pro Gly Ala Thr
 165 170 175
 Ser His Phe Ser Trp Arg Asn Asn Asn Met Ser Val Tyr Lys Ala Phe
 180 185 190
 Glu His Gln His Val Pro Glu Ile Lys Gln Ser Leu Lys Gln Leu Gln
 195 200 205
 Asn Ser Phe Asp Ala Glu Ile Asp Phe Ile Pro Tyr Arg Gly Asp Phe
 210 215 220
 Pro Arg Gly Ile Phe Ala Thr Leu Val Val Lys Thr Lys Val Ala Leu
 225 230 235 240
 Glu Glu Ile Val Arg Met Tyr Glu Glu Tyr Tyr Ala Lys Asp Ser Phe
 245 250 255
 Val His Ile Val Asp Lys Asn Ile Asp Leu Lys Gln Val Val Asn Thr
 260 265 270
 Asn Lys Cys Leu Ile His Leu Glu Lys His Gly Asp Lys Leu Leu Ile
 275 280 285
 Ile Ser Cys Ile Asp Asn Leu Lys Gly Ala Ser Gly Gln Ala Val
 290 295 300
 His Asn Met Asn Leu Met Phe Asn Leu Glu Glu Thr Val Gly Leu Arg
 305 310 315 320
 Leu Lys Pro Ser Ala Phe
 325

<210> 6598

<211> 228

<212> PRT

<213> B.fragilis

<400> 6598

Leu Lys Pro Ile Arg Ile Met Lys Lys Ile His Val Ser Ala Ile Leu
 1 5 10 15
 Ile Leu Leu Val Val Met Ser Ser Cys Ala Gly Leu Ile Leu Asn Phe
 20 25 30
 Lys Asn Ser Gln Leu Met Ser Ile Gln Lys Gly Met Thr Gln Gln Glu
 35 40 45
 Val Lys Ala Ile Leu Gly Lys Pro Asn Tyr Arg Arg Phe Asp Gly Ala
 50 55 60

Met	Glu	Glu	Trp	Glu	Tyr	Arg	Gly	Tyr	Leu	Ser	Lys	Ala	Gly	His	Ser
65					70					75					80
Val	Ile	Cys	Val	Asn	Phe	Ile	Asp	Asn	Arg	Val	Val	Gly	Leu	Asp	Ser
				85					90					95	
Phe	Arg	Asp	Gly	Ala	Pro	Thr	Ala	Pro	Pro	Ala	Pro	Ser	Phe	Ser	Leu
			100					105					110		
Gly	Ile	Gly	Gly	Thr	Val	Thr	Ala	Ser	Asp	Ile	Ala	Pro	Ala	Cys	Asp
		115					120					125			
Tyr	Arg	Ala	Met	Arg	Asn	Asp	Glu	Phe	Ala	Arg	Phe	Leu	Asn	Asp	Val
	130					135					140				
Lys	Ser	Lys	Thr	Phe	Asp	Ser	Asp	Arg	Thr	Asp	Phe	Ile	Glu	Lys	Ala
145					150					155					160
Thr	Arg	Ser	Thr	Gly	Phe	Thr	Ser	Glu	Gln	Cys	Cys	Arg	Leu	Ile	Lys
				165					170					175	
Leu	Tyr	Ser	Phe	Asp	Asp	Asp	Arg	Thr	Lys	Val	Leu	Lys	Ile	Leu	Tyr
			180					185					190		
Pro	Ser	Val	Val	Asp	Lys	Asp	Asn	Phe	Ser	Ala	Ala	Ile	Asp	Gly	Leu
		195					200					205			
Asp	Phe	Leu	Ser	Asn	Gln	Asp	Thr	Val	Lys	Asn	Phe	Val	Arg	Asn	Tyr
	210					215					220				
Asn	Arg	Ile	Lys												
225															

<210> 6599

<211> 260

<212> PRT

<213> B.fragilis

<400> 6599

Leu	Tyr	Asn	Met	Lys	Val	Ala	Ile	Ile	Gly	Ala	Gly	Asn	Met	Gly	Gly
1				5					10					15	
Ser	Ile	Ala	Cys	Gly	Leu	Ala	Lys	Gly	Lys	Leu	Ile	Pro	Ala	Ser	Asp
			20					25				30			
Ile	Ile	Val	Ser	Asn	Pro	Ser	Ile	Gly	Lys	Leu	Glu	Ala	Leu	Lys	Lys
		35				40						45			
Glu	Phe	Pro	Ser	Ile	Ala	Ile	Thr	Arg	Asn	Asn	Ala	Glu	Ala	Ala	Thr
	50					55					60				
Gly	Ala	Asp	Ile	Val	Ile	Leu	Ala	Val	Lys	Pro	Trp	Leu	Ile	Arg	Gly
65				70					75					80	
Val	Leu	Arg	Glu	Met	Lys	Leu	Arg	Ser	Lys	Gln	Ile	Leu	Val	Ser	Val
				85					90					95	
Ala	Ala	Gly	Ile	Ser	Phe	Glu	Gln	Leu	Ala	His	Asp	Val	Val	Glu	Pro
		100						105					110		
Glu	Met	Pro	Met	Phe	Arg	Ile	Val	Pro	Asn	Thr	Ala	Ile	Ser	Glu	Leu
		115					120					125			
Gln	Ser	Met	Thr	Leu	Ile	Ala	Ser	Arg	Asn	Ala	Gly	Gln	Glu	Leu	Glu
	130					135					140				
Thr	Leu	Met	Val	Asn	Leu	Phe	Ser	Glu	Met	Gly	Met	Ala	Met	Ile	Leu
145				150						155					160
Pro	Glu	Asp	Lys	Leu	Glu	Ala	Ala	Thr	Ala	Leu	Thr	Ser	Cys	Gly	Ile
			165					170						175	
Ala	Tyr	Val	Leu	Lys	Tyr	Ile	Gln	Ala	Ala	Met	Gln	Ala	Gly	Ile	Glu
		180					185						190		
Met	Gly	Ile	Arg	Pro	Ser	Asp	Ala	Met	Asp	Met	Ile	Ala	Gln	Ser	Val
	195						200					205			
Lys	Gly	Ala	Ala	Glu	Leu	Ile	Leu	Asn	Asn	Asp	Thr	His	Pro	Ser	Val
	210					215					220				
Glu	Ile	Asp	Lys	Val	Thr	Thr	Pro	Gly	Gly	Ile	Thr	Ile	Lys	Gly	Ile
225					230					235					240

Asn Glu Leu Glu His Asn Gly Phe Thr Ser Ala Ile Ile Lys Ala Met
 245 250 255
 Lys Ala Ser Arg
 260

<210> 6600
 <211> 230
 <212> PRT
 <213> B.fragilis

<400> 6600

Ser Arg Ser Ile Ser Val Phe Leu His Pro Val Ile Ile Ile Val Ser
 1 5 10 15
 Leu Val Met Lys Asn Leu Glu Arg Leu Phe Ala Glu Lys Leu Leu Lys
 20 25 30
 Ile Lys Ala Ile Lys Leu Gln Pro Ala Asn Pro Phe Thr Trp Ala Ser
 35 40 45
 Gly Trp Lys Ser Pro Phe Tyr Cys Asp Asn Arg Lys Thr Leu Ser Tyr
 50 55 60
 Pro Ser Leu Arg Ser Phe Val Lys Phe Glu Ile Thr Arg Leu Val Leu
 65 70 75 80
 Glu Arg Phe Gly Gln Val Asp Ala Ile Ala Gly Val Ala Thr Gly Ala
 85 90 95
 Ile Pro Gln Gly Ala Leu Val Ala Asp Ala Leu Asn Leu Pro Phe Val
 100 105 110
 Tyr Val Arg Ser Thr Pro Lys Asp His Gly Leu Glu Asn Leu Ile Glu
 115 120 125
 Gly Glu Leu Arg Pro Gly Met Lys Val Val Val Val Glu Asp Leu Ile
 130 135 140
 Ser Thr Gly Gly Ser Ser Leu Lys Ala Val Glu Ala Ile Arg Arg Asp
 145 150 155 160
 Gly Cys Glu Val Ile Gly Met Val Ala Ala Tyr Thr Tyr Gly Phe Pro
 165 170 175
 Val Ala Glu Gln Ala Phe Lys Asp Ala Lys Val Pro Leu Val Thr Leu
 180 185 190
 Thr Asn Tyr Glu Ala Val Leu Asp Val Ala Leu Arg Thr Gly Tyr Ile
 195 200 205
 Glu Glu Glu Asp Ile Ala Thr Leu Asn Glu Trp Arg Lys Asp Pro Ala
 210 215 220
 His Trp Glu Thr Gly Lys
 225 230

<210> 6601
 <211> 458
 <212> PRT
 <213> B.fragilis

<400> 6601

Ile Asn Thr Ile Phe Gln Met Arg Ile Lys Phe Leu Ser Val Ile Val
 1 5 10 15
 Ser Phe Phe Leu Val Ser Phe Ala Val Thr Ser Cys Leu Asp Thr Glu
 20 25 30
 Glu Ile Glu Tyr Ser Pro Asp Ala Thr Ile His Ala Phe Ala Leu Asp
 35 40 45
 Thr Ile His Gly Val Asn Tyr Lys Phe Thr Ile Asp Gln Leu Gly Pro
 50 55 60
 Asp Gly Val Gly Leu Ile Tyr Asn Gln Asp Ser Leu Pro Val Gly Ser
 65 70 75 80
 Asp Thr Ile Ile Asp Arg Ile Leu Ile Lys Thr Leu Thr Thr Thr Ser

85 90 95
 Gly Ile Ile Thr Ala Lys Asn Ala Glu Gly Gln Asp Thr Leu Phe Asn
 100 105 110
 Tyr Ser Asp Ser Ile Asp Phe Arg Gly Thr Met Gln Lys Pro Met Arg
 115 120 125
 Ile Lys Val Trp Ala Ala Asp Met Gln Tyr Thr Lys Glu Tyr Thr Ile
 130 135 140
 Ser Val Arg Val His Gln Gln Asp Pro Asp Ser Met Asn Trp Thr Lys
 145 150 155 160
 Met Thr Asp Asn Phe Ala Asn Tyr Ser Gly Tyr Gln Lys Ser Val Thr
 165 170 175
 Leu Asn Glu Asp Leu Leu Ile Tyr Thr Ser Asn Thr Thr Ala Tyr Gln
 180 185 190
 Ser Ser Gly Asp Val Ile Ser Lys Gly Arg Ser Trp Thr Pro Val Ser
 195 200 205
 Ile Thr Gly Leu Pro Asp Asn Ile Lys Leu Ser Ser Ile Ile Ser Phe
 210 215 220
 Gly Gly Lys Leu Tyr Ala Thr Asn Gly Glu Ser Ala Tyr Val Ser Ser
 225 230 235 240
 Asp Gly Ala Leu Trp Asn Val Ala Thr Asp Leu Asn Lys Asn Gly Lys
 245 250 255
 Val Glu Met Leu Ile Ala Pro Phe Pro Lys Asn Glu Gly Asn Leu Leu
 260 265 270
 Gly Ile Ser Gly Ile Ala Gly Ile Asn Asn Gly Asp Gln Ser Thr
 275 280 285
 Phe Ala Ile Thr Asn Pro Glu Ala Thr Ala Trp Asn Ile Gly Ser Glu
 290 295 300
 Thr Val Gly Ala Asp Phe Pro Leu Glu Asn Leu Ser Ala Thr Ser Tyr
 305 310 315 320
 Leu Thr Ala Thr Gly Ile Gln Thr Ile Ala Val Met Gly Asn Asn Arg
 325 330 335
 Asn Ala Asn Asp Thr Thr Ser Ile Ala Trp Thr Ser Gln Asp Gly Leu
 340 345 350
 Leu Trp Ile Pro Leu Lys Thr Ser Ser Thr Ala Tyr Cys Pro Lys
 355 360 365
 Leu Asp Asn Pro Ser Phe Phe Tyr Tyr Asp Asn Ala Phe Leu Ala Phe
 370 375 380
 Gly Gly Asn Phe Glu Thr Ile Tyr Thr Ser Glu Ala Gly Ile Ala Trp
 385 390 395 400
 Tyr Lys Ala Asn Lys Lys Ile Phe Leu Pro Ala Glu Phe Lys Asp Arg
 405 410 415
 Gly Asn Asn Tyr Ser Thr Val Val Asp Lys Asn Asn Phe Ile Trp Val
 420 425 430
 Ile Trp Ser Asn Gly Gly Ala Asn Glu Val Trp Arg Gly Arg Leu Asn
 435 440 445
 Lys Phe Gly Phe Glu Arg Gln Asn Asn Asn
 450 455

<210> 6602

<211> 203

<212> PRT

<213> B.fragilis

<400> 6602

Leu Thr Thr Ile Ile Leu Tyr Thr Lys Ser Thr Met Asp Thr Gln Gln
 1 5 10 15
 Ile Asp Val Met Val Ala Asp Ala Ser His Glu Val Tyr Val Asp Thr
 20 25 30
 Ile Leu Glu Thr Ile Arg Asn Ala Ala Lys Val Arg Gly Thr Gly Ile

35	40	45
Ala Glu Arg Thr His Glu Tyr Val Ala Thr Lys Met Lys Glu Gly Lys		
50	55	60
Ala Ile Ile Ala Leu Cys Gly Asp Val Phe Ala Gly Phe Thr Tyr Ile		
65	70	75
Glu Ser Trp Gly Asn Lys Gln Tyr Val Ala Thr Ser Gly Leu Ile Val		
85	90	95
His Pro Asp Phe Arg Gly Leu Gly Leu Ala Lys Arg Ile Lys Gln Ala		
100	105	110
Ser Phe Gln Leu Ala Arg Leu Arg Trp Pro Arg Ala Lys Ile Phe Ser		
115	120	125
Leu Thr Ser Gly Ala Ala Val Met Lys Met Asn Thr Glu Leu Gly Tyr		
130	135	140
Val Pro Val Thr Phe Asn Glu Leu Thr Asp Asp Glu Ala Phe Trp Lys		
145	150	155
Gly Cys Glu Gly Cys Ile Asn His Glu Ile Leu Met Ala Lys Asp Arg		
165	170	175
Lys Phe Cys Ile Cys Thr Ala Met Leu Tyr Asp Pro Thr Asp Pro His		
180	185	190
Asn Ile Lys Lys Glu Gln Glu Arg Asn Asn Ile		
195	200	

<210> 6603

<211> 377

<212> PRT

<213> B.fragilis

<400> 6603

Glu Glu Thr Met Asn Leu Phe Asp Val Tyr Pro Leu Phe Asp Ile Asn		
1	5	10
Ile Ile Lys Gly Lys Gly Cys His Val Trp Asp Glu Asn Gly Thr Glu		
20	25	30
Tyr Leu Asp Leu Tyr Gly Gly His Ala Val Ile Ser Ile Gly His Ala		
35	40	45
His Pro His Tyr Val Asp Met Ile Ser Lys Gln Val Ala Thr Leu Gly		
50	55	60
Phe Tyr Ser Asn Ser Val Ile Asn Lys Leu Gln Gln Val Ala Glu		
65	70	75
Arg Leu Gly Lys Ile Ser Gly Tyr Glu Asp Tyr Ser Leu Phe Leu Ile		
85	90	95
Asn Ser Gly Ala Glu Ala Asn Glu Asn Ala Leu Lys Leu Ala Ser Phe		
100	105	110
His Asn Gly Arg Thr Lys Val Ile Ser Phe Gly Lys Ala Phe His Gly		
115	120	125
Arg Thr Ser Leu Ala Val Glu Ala Thr Asp Asn Pro Lys Ile Ile Ala		
130	135	140
Pro Ile Asn Ala Asn Gly His Ile Thr Tyr Leu Pro Leu Asn Asp Ile		
145	150	155
Glu Ala Ala Lys Thr Glu Leu Ala Lys Glu Asp Ile Cys Ala Val Ile		
165	170	175
Ile Glu Gly Ile Gln Gly Val Gly Gly Ile Lys Ile Pro Thr Pro Glu		
180	185	190
Phe Leu Gln Glu Leu Arg Lys Ala Cys Thr Glu His Gly Thr Ile Leu		
195	200	205
Ile Leu Asp Glu Ile Gln Ser Gly Tyr Gly Arg Ser Gly Lys Phe Phe		
210	215	220
Ala His Gln Tyr Ala Gly Ile Lys Pro Asp Ile Ile Thr Val Ala Lys		
225	230	235
Gly Ile Gly Asn Gly Phe Pro Met Ala Gly Val Leu Ile Ser Pro Met		

				245					250					255			
Phe	Thr	Pro	Val	Tyr	Gly	Met	Leu	Gly	Thr	Thr	Phe	Gly	Gly	Asn	His		
			260					265					270				
Leu	Ala	Cys	Ser	Ala	Ala	Leu	Ala	Val	Met	Asp	Val	Ile	Glu	Gln	Glu		
		275					280					285					
Asn	Leu	Val	Glu	Asn	Ala	Ala	Asn	Ile	Gly	Ser	Tyr	Leu	Leu	Glu	Glu		
	290					295				300							
Leu	Lys	Lys	Phe	Lys	Glu	Ile	Lys	Glu	Val	Arg	Gly	Cys	Gly	Leu	Met		
305					310					315					320		
Ile	Gly	Met	Glu	Phe	Asp	Gln	Pro	Val	Lys	Glu	Ile	Arg	Ser	Arg	Leu		
				325					330					335			
Ile	His	Glu	Gln	Lys	Val	Phe	Thr	Gly	Ala	Ser	Gly	Thr	Asn	Val	Ile		
			340					345					350				
Arg	Leu	Leu	Pro	Pro	Leu	Cys	Leu	Ser	Lys	Glu	Glu	Ala	Asp	Glu	Phe		
		355				360						365					
Leu	Ala	Arg	Leu	Arg	Lys	Val	Leu	Gly									
	370					375											

<210> 6604

<211> 413

<212> PRT

<213> B.fragilis

<400> 6604

Lys	Tyr	Met	Met	Ile	Tyr	Ile	Ile	Phe	Ser	Val	Phe	Ile	Ile	Ile	Ile		
1				5					10					15			
Leu	Phe	Ile	Cys	Ala	Arg	Tyr	Trp	Tyr	Leu	Trp	Arg	Lys	Ile	Ser	Val		
			20					25					30				
Gln	Lys	Asn	Glu	Trp	Val	Ala	Gln	Thr	Lys	Glu	Ser	Asp	Thr	Ile	Leu		
		35				40						45					
Arg	Ser	Met	Asn	Ala	Cys	Phe	Ile	Leu	Ile	Asn	Ser	Asp	Leu	Val	Val		
	50				55					60							
Ile	Arg	Thr	Asn	Tyr	Tyr	Asp	Leu	Ser	Gly	Ile	Ser	Glu	Glu	Pro	Glu		
65				70					75					80			
Ser	Ser	Gly	Arg	Val	Gly	Asp	Leu	Leu	Asn	Cys	Lys	Asn	Ala	Val	Arg		
			85					90					95				
Ser	Gly	Gly	Gly	Cys	Gly	Ala	His	Lys	Asn	Cys	Glu	Asn	Cys	Met	Ile		
		100				105						110					
Arg	His	Thr	Ile	Glu	Asn	Ala	Phe	Cys	His	Lys	Lys	Gly	Phe	His	Lys		
	115					120						125					
Leu	Glu	Ala	Ser	Met	Arg	Leu	Ser	Ser	Asp	His	Gln	Gln	Ile	Ile			
	130					135			140								
Pro	Cys	Asp	Val	Ser	Val	Ser	Gly	Thr	Tyr	Leu	Asn	Asn	Glu	Gly	His		
145				150					155					160			
Glu	Gln	Met	Leu	Leu	Thr	Val	Tyr	Asp	Ile	Thr	Glu	Leu	Lys	Asn	Met		
			165					170						175			
Gln	Arg	Leu	Leu	Asn	Ile	Glu	Lys	Glu	Asn	Ala	Val	Ser	Ala	Glu	Lys		
		180				185						190					
Leu	Lys	Ser	Ala	Phe	Ile	Ala	Asn	Met	Ser	His	Glu	Ile	Arg	Thr	Pro		
	195					200						205					
Leu	Asn	Ala	Ile	Val	Gly	Phe	Ser	Gly	Leu	Leu	Ala	Ser	Ala	Asp	Asp		
	210				215						220						
Asp	Thr	Glu	Lys	Lys	Met	Tyr	Leu	Asp	Ile	Val	Ala	Glu	Asn	Asn	Asp		
225				230					235					240			
Arg	Leu	Leu	Gln	Ile	Val	Thr	Asp	Val	Leu	Asp	Leu	Ser	Lys	Ile	Glu		
			245					250						255			
Ser	Gly	Ser	Leu	Asp	Phe	His	Tyr	Ser	Glu	Phe	Asp	Val	Asn	Asp	Leu		
		260				265						270					
Leu	Cys	Ala	Leu	His	Gly	Ile	Leu	Asn	Ile	Arg	Leu	Lys	Asp	Lys	Pro		

275 280 285
 Glu Ile Lys Leu Ile Cys Lys Ala Gly Thr Asp Glu Trp Ile Ile Tyr
 290 295 300
 Ser Glu Gln His Arg Ile Val Gln Ile Ile Thr Asn Leu Val His Asn
 305 310 315 320
 Ala Met Lys Phe Thr His Ser Gly Glu Ile Cys Phe Gly Cys Arg Pro
 325 330 335
 Gln Gly Glu Asp Glu Ile Tyr Phe Tyr Val Ser Asp Thr Gly Ile Gly
 340 345 350
 Ile Pro Ala Gly Glu Gln Asp Lys Ile Phe Asp Arg Phe Thr Lys Leu
 355 360 365
 Asp His Glu Val Pro Gly Thr Gly Leu Gly Leu Thr Leu Ser Gln Thr
 370 375 380
 Ile Val Gln Asn Leu Gly Gly Glu Met Gly Val Glu Ser Glu Val Thr
 385 390 395 400
 Lys Gly Ser Thr Phe Trp Phe Thr Leu Pro Leu Lys Ser
 405 410

<210> 6605
 <211> 659
 <212> PRT
 <213> B.fragilis

<400> 6605

Leu Ser Val Ile Cys Ile Thr Glu Lys Tyr Asn Arg Leu Leu Asn Thr
 1 5 10 15
 His Ala Leu Asn Met Lys Leu Lys Phe Leu Phe Leu Phe Leu Ser Tyr
 20 25 30
 Ser Leu Ser Ile His Ser Gln Asn Asn Leu Leu Tyr Ala Asp Ser Ser
 35 40 45
 Lys Asp Ser Leu Phe Phe Glu Gln Lys Lys Ala Leu Leu Thr Ala Thr
 50 55 60
 Trp His Lys Pro Phe Ser Tyr Ser Ser Ile Gln Ser Asn His Ala Pro
 65 70 75 80
 Leu Gly Pro Tyr Met Gly Asn Gly Asp Val Gly Val Val Ala Phe Thr
 85 90 95
 Ser Asp Asn Ser Gln Thr Leu Lys Ile Ser Lys Val Asp Phe Val Thr
 100 105 110
 Asp Gly Trp Thr Asp Trp Ala Gly Ser Gly Pro Ala Ala Leu Pro Ile
 115 120 125
 Gly Gly Val Asn Ile Thr Val Asn Ser Pro Val Tyr Ser Gly Phe Val
 130 135 140
 Thr Val Asn Arg Ala Asp Pro Ser Gly Phe Ser Tyr Gln Met Asp Gln
 145 150 155 160
 Leu Asn Ser Glu Leu Arg Met Thr Thr Ala Thr Ala Gln Gln Val Lys
 165 170 175
 Met Val Thr Trp Met Gly Val Asn Glu Asn Met Ile Ile Thr Glu Leu
 180 185 190
 Thr Thr Ser Ser Lys Thr Pro Val Pro Ile Ser Val Asp Thr Tyr Ala
 195 200 205
 Asp Asn Gln Ser Ala Ser Tyr Thr Thr Thr Ala Gln Val Asn Gly Gln
 210 215 220
 Ile Ala Gln Val Thr Arg Gln Thr Lys Thr Asp Ala Val Arg Trp Ile
 225 230 235 240
 Ser Cys Ala Gly Ile Ser Thr Lys Ile Val Gly Val Met Ser Lys Pro
 245 250 255
 Glu Cys Leu Ser Glu Ser Met Val Arg Ser Asn Phe Gln Leu Thr Ala
 260 265 270
 Ser Asp Thr Leu Leu Val Val Val Tyr Val Ser Gly Gly Gly Lys Gly

275 280 285
 Asn Asp Pro Gln Leu Pro Thr Ala Tyr Asn Lys Leu Leu Thr Leu Asn
 290 295 300
 Lys Ala Asp Val Thr Gln Leu Lys Met Ala Lys Lys Ala Trp Trp Lys
 305 310 315 320
 Asp Met Trp Thr Arg Ser Tyr Val Glu Thr Asn Asp Glu Leu Leu Asn
 325 330 335
 Arg His Tyr Leu Ser Ser Ile Tyr Leu Leu Ala Ser Ala Tyr Asn Glu
 340 345 350
 His Ser Pro Val Ser Gly Gly Met Tyr Gly Val Trp Asn Met Asp Asp
 355 360 365
 Lys Met Met Tyr His Gly Asp Ile His Leu Asn Tyr Asn Ser Gln Ala
 370 375 380
 Gly Phe Tyr Ser Ala Phe Ser Ser Asn Arg Pro Glu Ile Ala Leu Pro
 385 390 395 400
 Phe Tyr Lys Thr Ile Glu Leu Leu Ile Pro Glu Gly Lys Arg Arg Ala
 405 410 415
 Lys Glu Glu Met Gly Ile Met His Pro Ser Trp Glu Gly Lys Ser Cys
 420 425 430
 Arg Gly Ile Leu Phe Pro Val Gly Ala Leu Gly Ile Gly Val Phe Tyr
 435 440 445
 Asn Tyr Trp Trp Gln Gln Thr Met Asn Ala Pro Phe Asn Val Pro Leu
 450 455 460
 Phe Ser Trp Tyr Tyr Glu Tyr Thr Gly Asp Leu Asn Phe Leu Arg Tyr
 465 470 475 480
 Arg Ala Tyr Pro Tyr Ile Arg Leu Cys Gly Asp Phe Tyr Glu Asp Tyr
 485 490 495
 Met Gln Lys Glu Thr Tyr Gly Lys Ser Tyr Arg Tyr Thr Ile Thr Thr
 500 505 510
 Gly Gly His Glu Asp Ser Trp Asp Leu Asn Pro Pro Ser Asp Leu Ala
 515 520 525
 Phe Val Lys Gln Thr Phe Gly Leu Leu Val Arg Tyr Ser Lys Leu Leu
 530 535 540
 Gly Val Asp Gln Lys Arg Arg Lys Lys Trp Asp Asp Ile Leu Ser His
 545 550 555 560
 Leu Pro Glu Tyr Lys Val Ile Met Pro Thr Lys Thr Pro Asn Gln Gly
 565 570 575
 Leu Pro Val Tyr Ala Lys Asn Glu Ala Gly Trp Asp Leu Pro Ser His
 580 585 590
 Ala Ile Gln Leu His Ala Ala Tyr Pro Cys Glu Ile Leu Asn Leu His
 595 600 605
 Ser Asp Ser Thr Ala Leu Gln Ile Ala Arg Asn Thr Leu Tyr Tyr Tyr
 610 615 620
 Glu Val Ser Gln Lys Gly Phe Thr Asn Thr Met Asn Glu Leu Gly Leu
 625 630 635 640
 Ser Ala Phe Val Met Gly Pro Val Ser Asp Leu Leu Pro Ile Ser Tyr
 645 650 655
 Trp Lys Ile

<210> 6606

<211> 160

<212> PRT

<213> B.fragilis

<400> 6606

Leu Tyr Lys Met Lys Lys Lys Ala Asn Arg Leu Asp Ala Ile Lys Met
 1 5 10 15
 Ile Ile Ser Ser Lys Glu Val Gly Ser Gln Glu Glu Leu Leu Gln Glu

Ile	Asn	Lys	Met	Ile	Asp	Arg	Phe	Leu	Ser	Gln	Thr	Ser	Phe	Asn	Ser
1				5					10					15	
Gln	Glu	Asp	Phe	Val	Lys	Asn	Leu	Lys	Ile	His	Val	Pro	Asp	Asn	Phe
			20					25					30		
Asn	Phe	Gly	Tyr	Asp	Ile	Val	Asp	Ala	Trp	Ala	Ala	Glu	Gln	Pro	Asp
		35					40					45			
Lys	Pro	Ala	Leu	Leu	Trp	Thr	Asn	Asp	Lys	Gly	Glu	His	His	Gln	Phe
	50					55					60				
Ser	Phe	Ala	Asp	Met	Lys	Gln	Tyr	Thr	Asp	Arg	Thr	Ala	Ser	Tyr	Phe
65					70					75					80
Gln	Ser	Leu	Gly	Ile	Gly	His	Gly	Asp	Met	Val	Met	Leu	Ile	Leu	Lys
				85				90						95	
Arg	Arg	Tyr	Glu	Phe	Trp	Phe	Ser	Ile	Ile	Ala	Leu	His	Lys	Leu	Gly
			100					105					110		
Ala	Val	Val	Ile	Pro	Ala	Thr	His	Leu	Leu	Thr	Lys	Lys	Asp	Ile	Val
		115					120					125			
Tyr	Arg	Cys	Asn	Ala	Ala	Asp	Ile	Lys	Met	Ile	Val	Ala	Ala	Gly	Glu
	130					135					140				
Glu	Val	Val	Thr	Lys	His	Ile	Ile	Asp	Ala	Met	Pro	Asp	Ser	Pro	Thr
145					150					155					160
Val	Lys	His	Leu	Val	Ser	Val	Gly	Pro	Glu	Ile	Pro	Glu	Gly	Phe	Asp
				165				170						175	
Asp	Phe	His	Gln	Gly	Ile	Glu	His	Ala	Ala	Pro	Phe	Val	Lys	Pro	Glu
			180					185					190		
His	Pro	Asn	Thr	Asn	Asp	Asp	Ile	Ser	Leu	Met	Tyr	Phe	Thr	Ser	Gly
		195				200						205			
Thr	Thr	Gly	Glu	Pro	Lys	Met	Val	Ala	His	Asp	Phe	Thr	Tyr	Pro	Leu
		210				215					220				
Gly	His	Ile	Val	Thr	Gly	Ser	Phe	Trp	His	Asn	Leu	Lys	Glu	Asn	Ser
225					230					235					240
Leu	His	Leu	Thr	Ile	Ala	Asp	Thr	Gly	Trp	Gly	Lys	Ala	Val	Trp	Gly
				245				250						255	
Lys	Leu	Tyr	Gly	Gln	Trp	Ile	Ala	Gly	Ala	Asn	Val	Phe	Val	Tyr	Asp
			260					265					270		
His	Glu	Lys	Phe	Thr	Pro	Ala	Asp	Ile	Leu	Glu	Lys	Ile	Gln	Asn	Tyr

$$\begin{array}{ccccccc} \{t_{11}^{(1)}\} & \{t_{12}^{(1)}\} & \{t_{13}^{(1)}\} & \{t_{14}^{(1)}\} & \{t_{15}^{(1)}\} & \{t_{16}^{(1)}\} & \{t_{17}^{(1)}\} \\ \{t_{21}^{(1)}\} & \{t_{22}^{(1)}\} & \{t_{23}^{(1)}\} & \{t_{24}^{(1)}\} & \{t_{25}^{(1)}\} & \{t_{26}^{(1)}\} & \{t_{27}^{(1)}\} \\ \{t_{31}^{(1)}\} & \{t_{32}^{(1)}\} & \{t_{33}^{(1)}\} & \{t_{34}^{(1)}\} & \{t_{35}^{(1)}\} & \{t_{36}^{(1)}\} & \{t_{37}^{(1)}\} \\ \{t_{41}^{(1)}\} & \{t_{42}^{(1)}\} & \{t_{43}^{(1)}\} & \{t_{44}^{(1)}\} & \{t_{45}^{(1)}\} & \{t_{46}^{(1)}\} & \{t_{47}^{(1)}\} \\ \{t_{51}^{(1)}\} & \{t_{52}^{(1)}\} & \{t_{53}^{(1)}\} & \{t_{54}^{(1)}\} & \{t_{55}^{(1)}\} & \{t_{56}^{(1)}\} & \{t_{57}^{(1)}\} \\ \{t_{61}^{(1)}\} & \{t_{62}^{(1)}\} & \{t_{63}^{(1)}\} & \{t_{64}^{(1)}\} & \{t_{65}^{(1)}\} & \{t_{66}^{(1)}\} & \{t_{67}^{(1)}\} \\ \{t_{71}^{(1)}\} & \{t_{72}^{(1)}\} & \{t_{73}^{(1)}\} & \{t_{74}^{(1)}\} & \{t_{75}^{(1)}\} & \{t_{76}^{(1)}\} & \{t_{77}^{(1)}\} \end{array}$$

275 280 285
 His Val Thr Ser Leu Cys Ala Pro Pro Thr Ile Phe Arg Phe Leu Ile
 290 295 300
 His Glu Asp Leu Thr Lys Tyr Asp Leu Ser Ser Leu Glu Tyr Cys Thr
 305 310 315 320
 Ile Ala Gly Glu Ala Leu Asn Pro Ala Val Phe Asp Thr Phe Lys Lys
 325 330 335
 Leu Thr Gly Ile Lys Leu Met Glu Gly Phe Gly Gln Thr Glu Thr Thr
 340 345 350
 Leu Thr Val Ala Thr Phe Pro Trp Met Glu Pro Lys Pro Gly Ser Met
 355 360 365
 Gly Val Pro Asn Pro Gln Tyr Asn Val Asp Leu Ile Asp Tyr Glu Gly
 370 375 380
 Arg Ser Val Glu Ala Gly Glu Gln Gly Gln Ile Val Ile Arg Thr Asp
 385 390 395 400
 Lys Gly Lys Pro Leu Gly Leu Phe Lys Glu Tyr Tyr Arg Asp Ala Ser
 405 410 415
 Arg Thr His Glu Ala Trp His Asp Gly Ile Tyr Tyr Thr Gly Asp Val
 420 425 430
 Ala Trp Lys Asp Glu Asp Gly Tyr Leu Trp Phe Val Gly Arg Ala Asp
 435 440 445
 Asp Val Ile Lys Ser Ser Gly Tyr Arg Ile Gly Pro Phe Glu Val Glu
 450 455 460
 Ser Ala Leu Met Thr His Pro Ala Val Val Glu Cys Ala Ile Thr Gly
 465 470 475 480
 Val Pro Asp Glu Ile Arg Gly Gln Val Val Lys Ala Thr Ile Val Leu
 485 490 495
 Ala Lys Glu Tyr Arg Glu Arg Lys Gly Glu Asp Leu Val Lys Glu Leu
 500 505 510
 Gln Asn His Val Lys Lys Val Thr Ala Pro Tyr Lys Tyr Pro Arg Val
 515 520 525
 Ile Glu Phe Val Asp Glu Leu Pro Lys Thr Ile Ser Gly Lys Ile Arg
 530 535 540
 Arg Val Glu Ile Arg Lys Asn Asp Glu Lys
 545 550

<210> 6608

<211> 334

<212> PRT

<213> B.fragilis

<400> 6608

Ile Met Glu Phe Leu Thr Asn Glu Lys Leu Thr Ile Val Gly Ala Ala
 1 5 10 15
 Gly Met Ile Gly Ser Asn Met Ala Gln Thr Ala Leu Met Met Lys Leu
 20 25 30
 Thr Pro Asn Ile Cys Leu Tyr Asp Pro Tyr Ala Pro Ala Leu Glu Gly
 35 40 45
 Val Ala Glu Glu Leu Tyr His Cys Ala Phe Glu Gly Val Asn Leu Thr
 50 55 60
 Tyr Thr Ser Asp Ile Lys Glu Ala Leu Ser Gly Ala Lys Tyr Ile Val
 65 70 75 80
 Ser Ser Gly Gly Ala Ala Arg Lys Ala Gly Met Thr Arg Glu Asp Leu
 85 90 95
 Leu Lys Gly Asn Ala Glu Ile Ala Ala Gln Phe Gly Lys Asp Ile Arg
 100 105 110
 Gln Tyr Cys Pro Asp Val Lys His Val Val Val Val Phe Asn Pro Ala
 115 120 125
 Asp Ile Thr Gly Leu Ile Val Leu Leu Tyr Ala Gly Leu Lys Pro Ser

130 135 140
 Gln Val Ser Thr Leu Ala Ala Leu Asp Ser Thr Arg Leu Gln Asn Glu
 145 150 155 160
 Leu Val Lys Tyr Leu His Ile Pro Ala Ser Glu Ile Val Asn Cys Arg
 165 170 175
 Thr Tyr Gly Gly His Gly Glu Gln Met Ala Val Phe Ala Ser Thr Thr
 180 185 190
 Lys Val Gln Gly Glu Ala Leu Thr Lys Ile Ile Asp Thr Pro Arg Met
 195 200 205
 Pro Met Gln Asp Trp Glu Asp Leu Lys Val Arg Val Ile Gln Gly Gly
 210 215 220
 Lys His Ile Ile Asp Leu Arg Gly Arg Ser Ser Phe Gln Ser Pro Ala
 225 230 235 240
 Tyr Leu Ser Ile Glu Met Ile Ala Ala Ala Met Gly Gly Gln Pro Phe
 245 250 255
 Arg Trp Pro Ala Gly Thr Tyr Val Ser Asp Lys Lys Phe Asp His Ile
 260 265 270
 Leu Met Ala Met Glu Thr Ser Ile Thr Lys Glu Gly Val Ser Tyr Lys
 275 280 285
 Glu Ile Gln Gly Thr Pro Glu Glu Gln Lys Glu Met Glu Glu Ser Tyr
 290 295 300
 Ala His Leu Cys Lys Leu Arg Asp Glu Val Ile Ala Met Gly Ile Leu
 305 310 315 320
 Pro Glu Ile Asn Lys Trp His Glu Leu Asn Lys His Ile Asn
 325 330

<210> 6609

<211> 760

<212> PRT

<213> B.fragilis

<400> 6609

Met Asn Asn Ser Lys Ile Ile Asn Val Arg Leu Met Lys Lys Val Leu
 1 5 10 15
 Val Leu Val Leu Ser Phe Leu Ser Val Thr Ala Phe Ala Gln Asn Ile
 20 25 30
 Thr Val Lys Gly Ile Val Lys Asp Gly Thr Gly Glu Pro Ile Ile Gly
 35 40 45
 Gly Ser Val Leu Val Lys Gly Ser Ser Ile Gly Thr Val Thr Asp Val
 50 55 60
 Asp Gly Asn Tyr Thr Leu Ser Asn Val Pro Ala Asp Gly Val Leu Glu
 65 70 75 80
 Phe Ser Tyr Ile Gly Met Lys Lys Gln Asp Val Lys Val Ser Gly Lys
 85 90 95
 Thr Val Ile Asn Val Val Leu Gln Glu Asp Thr Gln Ile Leu Asp Glu
 100 105 110
 Val Val Val Thr Ala Leu Gly Leu Lys Arg Glu Gln Lys Ala Leu Gly
 115 120 125
 Tyr Ala Val Thr Glu Val Lys Gly Asp Asp Leu Lys Ala Ala Asn Thr
 130 135 140
 Ile Ser Pro Val Ala Ala Leu Gln Gly Lys Val Ala Gly Val Glu Ile
 145 150 155 160
 Arg Gln Ser Asp Gly Gly Met Phe Gly Ala Thr Lys Ile Gln Ile Arg
 165 170 175
 Gly Ala Ser Thr Leu Lys Gly Asn Asn Gln Pro Ile Tyr Val Ile Asp
 180 185 190
 Gly Val Ile Leu Asp Asn Ser Thr Ser Gly Asn Thr Thr Met Asp Trp
 195 200 205
 Asp Ala Gly Asn Asn Asn Ala Asn Asp Tyr Gly Asn Glu Leu Lys Asn

210 215 220
 Leu Asn Pro Asp Asp Phe Glu Thr Val Ser Val Leu Lys Gly Ala Ala
 225 230 235 240
 Ala Thr Ala Leu Tyr Gly Ser Arg Gly Leu Asn Gly Ala Val Val Ile
 245 250 255
 Thr Thr Lys Ser Gly Lys Gly Phe Lys Gly Phe Gly Val Ser Val Ser
 260 265 270
 Gln Thr Phe Gly Ile Asp His Ala Tyr Arg Thr Pro Asp Ile Gln Thr
 275 280 285
 Glu Tyr Gly Val Gly Leu Met Pro Gly Trp Lys Asp Thr Asp Asn Asn
 290 295 300
 Gly Ser Val Trp Asp Pro Phe Gln Phe Lys Leu Asp Asp Lys Gly Asp
 305 310 315 320
 Arg Thr Leu Ile Gly Ala Gly Ser Tyr Gly Trp Gly Pro Lys Tyr Asp
 325 330 335
 Gly Gln Pro Ile Arg Asn Tyr Asp Gly Thr Trp Thr Asn Tyr Ser Pro
 340 345 350
 His Lys Asn Asn Met Leu Asp Leu Tyr Gln Leu Gly Leu Asn Ser Asn
 355 360 365
 Thr Asn Val Ala Ile Arg Gly Gly Asn Asp Lys Thr Ser Tyr Tyr Thr
 370 375 380
 Ser Leu Ser Tyr Lys Lys Ala Arg Ser Thr Ser Glu Lys Asn Thr Phe
 385 390 395 400
 Glu Arg Tyr Ser Phe Leu Leu Lys Gly Ser His Lys Ile Ser Asp Arg
 405 410 415
 Val Glu Val Ser Ala Ala Met Ser Phe Thr Asn Ser Asn Pro Lys Asn
 420 425 430
 Ser Pro Arg Thr Val Gly Glu Arg Phe Val Asn Pro Asn Gly Thr Ile
 435 440 445
 Met Thr Pro Met Leu Asp Val Asn Tyr Phe Arg Asp Lys Tyr Leu Gly
 450 455 460
 Glu His Gly Gly Leu Ala Ser Thr Ser Tyr Gly Asp Lys Tyr Gly Ser
 465 470 475 480
 Val Pro Gly Arg Asp Leu Phe Phe Met Ile Asp Lys Tyr Asp Tyr Ser
 485 490 495
 Gln Lys Glu Thr Val Val Arg Pro Gln Met Glu Val Asn Val Gln Ile
 500 505 510
 Leu Asp Trp Leu Arg Phe Lys Ala Asp Ala Asn Met Asn Tyr Tyr Tyr
 515 520 525
 Thr Lys Phe Glu Glu Lys Gln Leu Gly Ser Gly Tyr Ala Asn Glu Gly
 530 535 540
 Gly Lys Tyr Thr Met Gly Gln Thr Thr Lys Glu Gln Ala Thr Phe Gly
 545 550 555 560
 Gly Thr Phe Thr Val Asn Lys Gln Ile Gln Asp Phe Ser Val Gly Gly
 565 570 575
 Phe Ala Arg Tyr Glu Tyr Tyr Thr Ser Arg Ser Glu Ala Tyr Lys Val
 580 585 590
 Tyr Thr Asp Gly Gly Met Val Val Pro Gly Gln Trp Phe Val Asp Asn
 595 600 605
 Ser Lys Asn Pro Lys Lys Ser Glu Ala Ser Ile Ser Asn Thr Lys Arg
 610 615 620
 Met Met Ser Ala Val Phe Ala Leu Asn Leu Gly Trp Lys Asn Gln Val
 625 630 635 640
 Tyr Leu Asp Val Thr Gly Arg Asn Asp Trp Ser Ser Ser Leu Val Tyr
 645 650 655
 Gln Asn Gly Met Gly Thr Tyr Ser Tyr Phe Tyr Pro Ser Val Ser Gly
 660 665 670
 Ser Trp Leu Leu Asn Glu Thr Phe Asp Leu Pro His Trp Ile Thr Phe
 675 680 685

Ala Lys Val Arg Gly Ser Trp Ala Gln Val Gly Asn Asp Thr Asp Pro
 690 695 700
 Tyr Tyr Val Asn Ser Val Tyr Gly Phe Glu Thr Lys Glu Met Tyr Asp
 705 710 715 720
 Gly Asn Ile Tyr Val Asn Thr Leu Asp Lys Thr Met Lys Ser Leu Lys
 725 730 735
 Leu Lys Pro Glu Arg Lys Asn Ala Trp Glu Val Gly Leu Asp Leu Arg
 740 745 750
 Leu Phe Asp Ser Ser Leu Thr Leu
 755 760

<210> 6610
 <211> 114
 <212> PRT
 <213> B.fragilis

<400> 6610

Ile Cys Ile Ser Val Pro Gln Leu Ile Ala Cys Cys Gly Leu Asp Cys
 1 5 10 15
 Glu Asn Cys Asp Ala Arg Ile Ala Thr Val Arg Asp Asp Asn Glu Leu
 20 25 30
 Arg Glu Lys Thr Ala Gln Lys Trp Ser Ile Met Asn Asn Ala Pro Glu
 35 40 45
 Ile Thr Pro Ala Thr Ile Asn Cys Met Gly Cys Arg Thr Asp Gly Ala
 50 55 60
 Lys Phe Ala Tyr Cys Asn Asp Tyr Cys Pro Ile Arg Lys Cys Val Asn
 65 70 75 80
 Glu Lys Gly Tyr Asn Thr Cys Gly Asp Cys Lys Glu Leu Asp Asp Cys
 85 90 95
 Gln Ile Val Gly Ala Ile Phe Gln His Ala Pro Asp Ala Lys Glu Asn
 100 105 110
 Leu Leu

<210> 6611
 <211> 321
 <212> PRT
 <213> B.fragilis

<400> 6611

Ile Val Thr Ser Leu Lys Leu Glu Asp Arg Leu Met Lys Asp Pro Phe
 1 5 10 15
 Lys Leu Asn Val Lys Ser Ile Met Ala Leu Tyr Glu Leu Phe Pro Thr
 20 25 30
 Glu Glu Ala Cys Ile Lys His Leu Glu Ala Ile Asn Trp His Asp Lys
 35 40 45
 Pro Val Ser Pro Phe Asp Lys Thr Ser Arg Val Tyr Lys Leu Lys Ser
 50 55 60
 Gly Lys Tyr Arg Cys Lys Asn Thr Gly Lys Asn Phe Thr Val Arg Thr
 65 70 75 80
 Gly Thr Met Phe Glu Lys Thr Lys Ile Ser Leu Arg Lys Trp Phe Ile
 85 90 95
 Ala Ile Trp Leu Val Thr Asn His Lys Ile Gly Leu Ser Ser Tyr Gln
 100 105 110
 Leu Ala Asn Asp Ile Glu Val Thr Gln Lys Thr Ala Trp Tyr Met Leu
 115 120 125
 His Lys Ile Arg His Ala Met Arg Leu Ala Asn Glu Asn Ile Leu Glu
 130 135 140
 Glu Ala Val Glu Ile Asp Glu Thr Val Val Gly Gly Lys Asn Gly Asn

$\frac{d^2x}{dt^2} = -\omega^2 x$

<400> 6612

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<210> 6613
<211> 138
<212> PRT
<213> B.fragilis
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<400> 6613

Pro	Thr	Arg	Ser	His	Thr	Met	Lys	Leu	Arg	Lys	Pro	Phe	Arg	Ile	Leu
1				5					10					15	
Arg	Asn	Leu	Ile	Leu	Phe	Phe	Phe	Ile	Ser	Ser	Ile	Gly	Ala	Val	Ile
			20					25					30		
Phe	Tyr	Arg	Phe	Val	Pro	Val	Tyr	Val	Thr	Pro	Leu	Met	Ile	Ile	Arg
		35					40					45			
Ser	Val	Gln	Gln	Leu	Val	Ser	Gly	Glu	Lys	Val	Val	Cys	Lys	His	Thr
	50					55				60					
Trp	Val	Pro	Phe	Asp	Lys	Ile	Ser	Pro	Ser	Leu	Pro	Met	Ala	Val	Ile
65				70					75					80	
Ala	Ser	Glu	Asp	Asn	Arg	Phe	Ala	Ser	His	Asn	Gly	Phe	Asp	Met	Ile
			85					90					95		
Glu	Ile	Lys	Lys	Ala	Met	Lys	Glu	Asn	Glu	Thr	Arg	Lys	Lys	Glu	Thr
			100				105					110			

Gly Cys Gln Tyr His Gln Pro Ala Asp Ser Glu Lys Arg Leu Ser Leu
 115 120 125
 Ala Thr Ile Phe Val Asp Thr Lys Arg Ile
 130 135

<210> 6614
 <211> 333
 <212> PRT
 <213> B.fragilis

<400> 6614

Glu Ser Pro Ser Thr Pro Cys Ser Cys Leu Ser Arg Arg Ser Thr Arg
 1 5 10 15
 Asn Met Tyr Cys Lys Pro His Arg Pro Gly Asn Thr Pro Gln Val Pro
 20 25 30
 Asp Asn Lys Gly Lys Cys Thr Arg Leu Val Asp Tyr Leu Ser Lys Glu
 35 40 45
 Ser Gln Val Glu Arg Pro Tyr Tyr Asp Asn Phe Phe Ser Gln Gln Lys
 50 55 60
 Asp Tyr Val Ile Pro Leu Thr Val Lys Asn His Ile Asp Asn Asn His
 65 70 75 80
 Arg Thr Leu Lys Ser Asn Asp Asp Lys Phe Tyr Met Leu Ser Ile Asn
 85 90 95
 Pro Ser Gly Asp Glu Gln Arg His Leu Ile Glu Arg Val Thr Gly Arg
 100 105 110
 Lys Val Gly Glu Phe Ser Glu Leu Thr Pro Gly Glu Gln Glu Ser Val
 115 120 125
 Leu Ala Gln Met Lys Lys Phe Thr Arg Glu Cys Met Asp Glu Tyr Ala
 130 135 140
 Arg Asn Phe Tyr Arg Glu Lys Ile Lys Ser Gly Asp Asp Leu Val Trp
 145 150 155 160
 Tyr Gly Arg Val Glu Thr Glu Arg His Tyr Lys Asn Asp Asp Pro Glu
 165 170 175
 Val Lys Ala Gly Arg Ala Lys Ala Gly Asp Lys Lys Pro Gly Leu Gln
 180 185 190
 Leu His Val His Val Ile Val Ser Arg Met Asp Arg Thr Gln Thr Val
 195 200 205
 Ser Leu Ser Pro Leu Ser Lys Ser Arg Gly Asn Arg Gln Val Leu Glu
 210 215 220
 Gly Arg Glu Val Val Val Gly Phe Asp Arg Ser Gln Trp Ser Ser Arg
 225 230 235 240
 Cys Ala Ser Arg Phe Asn Gln Leu Tyr Asp Tyr Phe Pro Asn Tyr Tyr
 245 250 255
 Ser Arg Asp Glu Ser Leu Arg Lys Tyr Ser Glu Asn Trp Gln Ala Lys
 260 265 270
 Asn Glu Leu Lys Asn Glu Ala Val Ser Lys Leu Lys Gln Glu Val Leu
 275 280 285
 Lys Gly Glu Leu Lys Glu Glu Arg Arg Leu Tyr Ala Asn Thr Phe Arg
 290 295 300
 Ile Tyr Arg Phe Val Val Asn Pro Arg Lys Ala Ile Ile Gln Glu Leu
 305 310 315 320
 Lys Arg Leu Gly Thr Asp Leu Leu Ser Gly Arg Asp Leu
 325 330

<210> 6615
 <211> 322
 <212> PRT
 <213> B.fragilis

<400> 6615

Thr Ala Thr Pro Tyr Lys Asn Lys Asp Trp Gln Trp Asp Val Ala Met
 1 5 10 15
 Thr Tyr Thr Lys Asn Lys Asn Thr Ile Ile Ser Leu His Glu Asn Val
 20 25 30
 Ala Asp Tyr Ile Ala Leu Ser Gly Tyr Ala Asn Asp Tyr Asp Tyr His
 35 40 45
 Ile Gly Ser Val Ala Lys Val Gly Gly Asp Tyr Gly Leu Leu Met Ser
 50 55 60
 Asp Ile Leu Pro Ala Lys Asn Glu Lys Gly Glu Thr Leu Leu Glu Trp
 65 70 75 80
 Asp Asp Ser Trp Arg Gly Ala Tyr Glu Ala Arg Ser Gly Lys Val Gln
 85 90 95
 Glu Val Gly Lys Met Thr Pro Asp Phe Leu Gly Ser Leu Ser Thr Thr
 100 105 110
 Leu Ser Trp Lys Asn Leu Ser Leu His Ile Ala Thr Asp Met Arg Phe
 115 120 125
 Gly Gly Leu Val Ala Ser Tyr Ser Asn Leu Tyr Gly Thr Gln Ala Gly
 130 135 140
 Trp Ile Lys Ser Ser Leu Lys Trp Arg Asp Pro Glu His Gly Gly Leu
 145 150 155 160
 Ser Trp Thr Ser Gln Tyr Gly Asp Ser Lys Gly Ile Ser Tyr Gly Asp
 165 170 175
 Gly Val Ile Pro Asp Gly Val Phe Lys Asn Gly Thr Phe Ala Thr Leu
 180 185 190
 Val Asp Gly Thr Lys Met Asp Val Ser Gly Met Ser Tyr Lys Gln Leu
 195 200 205
 Val Ala Glu Gly Lys Leu Glu Pro Thr His Ala Gly Thr Tyr His Val
 210 215 220
 Asn Arg Ala Ala Trp Gly Gln Asn Thr Ile Phe Asp Thr Trp Val His
 225 230 235 240
 Glu Leu Asn Tyr Ile Ala Leu Arg Glu Ile Thr Leu Ser Tyr Arg Phe
 245 250 255
 Pro Lys Ser Val Ala Ser Lys Phe Gly Ala Gln Gly Leu Gly Leu Ser
 260 265 270
 Phe Ser Ala Arg Asn Leu Gly Tyr Leu Tyr Asn Ser Leu Pro Asn His
 275 280 285
 Leu Asn Pro Glu Ser Val Arg Gly Asn Thr Ala Ser Glu Phe Arg Ile
 290 295 300
 Arg Gly Tyr Glu Pro Tyr Thr Ala Asn Tyr Met Met Thr Ile Asn Val
 305 310 315 320
 Asp Phe

<210> 6616

<211> 288

<212> PRT

<213> B.fragilis

<400> 6616

Glu Leu Tyr Pro Asp Ile Met Asn Arg Ile Glu Lys Asn Lys Thr Gln
 1 5 10 15
 Thr Asp Gln Ala Trp Asn Lys Leu His Asn Arg Leu Glu Thr Asp Gly
 20 25 30
 Leu Leu Pro Thr Val Thr Glu Arg Arg Phe Ala Thr Arg Pro Thr Val
 35 40 45
 Trp Ile Gly Ile Ala Ala Ile Ala Ala Ile Ile Ser Leu Cys Val Tyr
 50 55 60
 Leu Pro Thr Val Leu Arg Thr Asp Arg His Leu Ser Gly Gly Glu Leu

65					70					75				80	
Leu	Val	Lys	Ala	Asn	Lys	Glu	Glu	Ser	Ile	Leu	Val	Thr	Thr	Leu	Glu
				85					90					95	
Asp	Gly	Ser	Val	Val	Tyr	Leu	Ser	Glu	Gln	Thr	Ser	Leu	Glu	Tyr	Pro
			100					105					110		
Lys	His	Phe	Ser	Lys	Lys	Arg	Arg	Glu	Val	Ser	Leu	Lys	Gly	Asn	Ala
		115				120						125			
Leu	Phe	Asp	Ile	Ala	Gly	Asn	Arg	Ala	Arg	Pro	Phe	Phe	Ile	Glu	Thr
	130				135						140				
Gly	Lys	Val	Gln	Ile	Glu	Val	Ile	Gly	Thr	Ala	Phe	His	Val	Arg	Asn
145				150					155					160	
Ser	Gly	Asn	Ser	Pro	Phe	Glu	Leu	Ala	Val	Gln	Arg	Gly	Glu	Val	Lys
			165					170						175	
Val	Thr	Gln	Lys	Gln	Asn	Gly	Gln	Glu	Ile	His	Val	Lys	Ala	Gly	Glu
		180						185					190		
Thr	Ala	Thr	Leu	Leu	Gly	Asp	Glu	Trp	Gln	Leu	Thr	Val	Thr	Glu	Asn
		195					200					205			
Ser	Glu	Gln	Phe	Thr	Arg	Tyr	Met	Gln	Asn	Met	Arg	Phe	Lys	Asp	Glu
	210				215						220				
Gln	Leu	Asp	His	Ile	Leu	His	Ala	Ile	Asn	Leu	Arg	Gln	Thr	Glu	Ile
225				230					235					240	
His	Leu	Gln	Ser	Ser	Pro	Glu	Leu	Gly	Lys	His	Val	Leu	Thr	Val	Ser
			245					250						255	
Phe	Ser	Glu	Asp	Ser	Pro	Glu	Lys	Met	Ala	Glu	Leu	Ile	Gly	Leu	Ala
		260					265						270		
Leu	Asn	Leu	Lys	Cys	Thr	Arg	Asn	Gln	Asn	Ile	Ile	Thr	Leu	Ser	Glu
		275					280					285			

<210> 6617
 <211> 148
 <212> PRT
 <213> B.fragilis

<400> 6617
 Ala Leu Phe Pro Leu Ala Pro Ser Leu Pro Leu Ala Pro Ser Phe Pro
 1 5 10 15
 Ala Ala Pro Ser Leu Pro Leu Ile Pro Ser Phe Pro Leu Ala Pro Ser
 20 25 30
 Phe Pro Leu Ala Pro Ser Leu Pro Leu Met Pro Ser Leu Pro Leu Ala
 35 40 45
 Pro Ser Leu Pro Tyr Ala Arg Ile Pro Val Ser Phe Pro Leu Ile Tyr
 50 55 60
 Gln Phe Pro Leu Val Pro Ile Ile Thr Ser Gly Asp Leu Pro Ser Leu
 65 70 75 80
 Pro Ile Ala Ala Phe Pro Val Ser Phe Pro Leu Ile Thr Gln Phe Pro
 85 90 95
 Phe Ser Pro Ile Val Thr Val Gly Val Val Pro Ala Thr Pro Ser Ser
 100 105 110
 Pro Leu Glu Gly Phe Pro Val Ser Thr Pro Ser Ile Asn Gln Leu Pro
 115 120 125
 Leu Ser Pro Ile Val Thr Thr Gly Gly Thr Ala Ser Ser Pro Phe Cys
 130 135 140
 Pro Ser Leu Pro
 145

<210> 6618
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 6618

Tyr	Gly	Pro	Phe	Glu	Gly	Leu	Leu	Arg	Pro	Gly	Glu	His	Arg	Ala	Glu
1				5					10					15	
Trp	Phe	Pro	Val	Phe	Gly	Gln	Leu	Leu	Phe	Asp	Ala	Thr	Val	Val	Asn
			20					25					30		
Ser	Thr	Glu	Tyr	Ala	His	Val	Lys	Gly	Tyr	Gly	Val	Arg	His	Asn	Pro
		35					40					45			
Cys	Cys	Ser	Gln	Val	Arg	Leu	Ile	Ile	Phe	His	Glu	Tyr	Met	Val	Tyr
	50					55					60				
Arg	Ala	Asn	Val	Asn	Val	Pro	Val	Ile	Pro	Glu	Leu	Phe	Glu	Thr	Ala
65					70					75					80
Lys	Arg	Ser	Ile	Ile	Val	Leu	Gly	Gly	Ala	Gly	Val	Val	Gln	Leu	Pro
				85					90					95	

<210> 6619

<211> 466

<212> PRT

<213> B.fragilis

<400> 6619

Gly	Leu	Gln	Pro	Glu	Glu	Ser	Arg	Ile	Phe	Ala	Thr	His	Phe	Leu	Leu
1				5					10					15	
Asn	Asn	Ile	Met	Gln	Gly	Ile	Lys	Asn	Leu	Thr	Gln	Gly	Pro	Ile	Asn
			20					25					30		
Lys	Gln	Leu	Phe	Asn	Leu	Ala	Met	Pro	Ile	Met	Ala	Thr	Ser	Phe	Ile
		35					40					45			
Gln	Met	Ala	Tyr	Ser	Leu	Thr	Asp	Met	Ala	Trp	Val	Gly	Arg	Leu	Gly
	50					55					60				
Ser	Glu	Ala	Val	Ala	Ala	Val	Gly	Ser	Val	Gly	Ile	Leu	Thr	Trp	Met
65					70					75					80
Ser	Gly	Ser	Ile	Ser	Leu	Leu	Asn	Lys	Val	Gly	Ser	Glu	Val	Ser	Val
				85					90					95	
Gly	Gln	Ser	Ile	Gly	Ala	Gln	Asn	His	Glu	Asp	Ala	Arg	Asn	Phe	Ala
			100					105					110		
Ser	His	Asn	Ile	Thr	Ile	Ala	Leu	Ile	Ile	Ser	Leu	Cys	Trp	Gly	Gly
		115					120					125			
Leu	Leu	Phe	Leu	Leu	Ala	Arg	Pro	Ile	Ile	Gly	Ile	Tyr	Glu	Leu	Glu
	130					135					140				
Ala	His	Ile	Thr	Glu	Asn	Ala	Ile	Ala	Tyr	Leu	Arg	Ile	Ile	Ser	Thr
145					150					155					160
Gly	Leu	Pro	Phe	Ile	Phe	Leu	Ser	Ala	Ala	Phe	Thr	Gly	Ile	Tyr	Asn
				165					170					175	
Ala	Ala	Gly	Arg	Ser	Lys	Ile	Pro	Phe	Tyr	Ile	Ser	Gly	Thr	Gly	Leu
			180					185					190		
Val	Leu	Asn	Ile	Leu	Leu	Asp	Pro	Leu	Phe	Ile	Phe	Gly	Phe	Gly	Leu
		195					200					205			
Gly	Thr	Asn	Gly	Ala	Ala	Tyr	Ala	Thr	Trp	Ile	Ser	Gln	Ala	Ala	Val
	210					215					220				
Phe	Gly	Ile	Phe	Ile	Tyr	Gln	Leu	Arg	Cys	Arg	Asp	Ala	Leu	Leu	Gly
225					230					235					240
Arg	Phe	Tyr	Phe	Phe	Thr	Arg	Leu	Lys	Lys	Lys	Tyr	Thr	His	Arg	Ile
				245					250					255	
Leu	Lys	Leu	Gly	Leu	Pro	Val	Ala	Thr	Leu	Asn	Thr	Leu	Phe	Ala	Phe
			260					265					270		
Val	Asn	Met	Phe	Leu	Cys	Arg	Thr	Ala	Ser	Glu	Gln	Gly	Gly	His	Ile
		275					280					285			
Gly	Leu	Met	Thr	Phe	Thr	Thr	Gly	Gly	Gln	Ile	Glu	Ala	Ile	Thr	Trp
	290					295					300				

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Asn Thr Ser Gln Gly Phe Ser Thr Ala Leu Ser Ala Phe Ile Ala Gln
 305 310 315 320
 Asn Tyr Ala Ala Gly Arg Thr Asp Arg Val Ile Lys Ser Trp His Met
 325 330 335
 Thr Leu Leu Met Thr Ser Ile Phe Gly Thr Leu Cys Thr Leu Leu Phe
 340 345 350
 Val Phe Phe Gly Asn Glu Ile Phe Ala Leu Phe Val Pro Glu Gln Ala
 355 360 365
 Ala Tyr Glu Ala Gly Gly Val Phe Leu Arg Ile Asp Gly Tyr Ser Gln
 370 375 380
 Leu Phe Met Met Leu Glu Ile Thr Thr Gln Gly Val Phe Tyr Gly Ile
 385 390 395 400
 Gly Arg Thr Ile Pro Pro Ala Ile Ile Ser Ile Thr Cys Asn Tyr Met
 405 410 415
 Arg Ile Pro Leu Ala Ile Leu Phe Val Arg Met Gly Met Gly Val Glu
 420 425 430
 Gly Ile Trp Trp Ala Val Cys Val Thr Thr Val Ala Lys Gly Leu Ile
 435 440 445
 Leu Ala Gly Trp Phe Ala Leu Ile Lys Arg Lys Val Leu Ser Arg Pro
 450 455 460
 Ile Leu
 465

<210> 6620
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 6620
 Leu Pro Ser Thr Thr His Asp Ile Asp Thr His Met Ile Thr Ala Thr
 1 5 10 15
 Met Glu Gly Asn Ala Ala Ala Gln Asp Phe Leu Ser His Leu Pro Leu
 20 25 30
 Lys Ala Thr Leu Pro Phe Ile Pro Arg Gly Val Ala Leu Gln Phe Ser
 35 40 45
 Ala Phe Leu Thr Pro Thr His Leu Ser Ser Glu Lys Phe Val Ala Val
 50 55 60
 Val Leu Met Thr Asn Ser Phe Val Thr Val Cys Glu Trp Gln
 65 70 75

<210> 6621
 <211> 401
 <212> PRT
 <213> B.fragilis

<400> 6621
 Ser Met Ala Thr Val Lys Ala Lys Phe Arg Pro Ser Thr Val Lys Asp
 1 5 10 15
 Arg Pro Gly Thr Ile Val Tyr Val Val Ile His Arg Arg Thr Val Arg
 20 25 30
 Gln Ile Thr Thr Gly Tyr Lys Val Phe Pro His Glu Trp Asp Glu Glu
 35 40 45
 Arg Ser Lys Pro Val Leu Ala Asp Asn Val Arg Arg Thr Thr Val Met
 50 55 60
 Gln Ser Ile Thr Arg Lys Leu Gln Ser Asp Met Lys Arg Leu Tyr Lys
 65 70 75 80
 Ile Ile Glu Arg Phe Asp Lys Gln Cys Arg Ser Tyr Ser Ser Asp Asp
 85 90 95
 Val Val Ala Glu Phe Arg His Ser Glu Glu Gly Asp Ser Phe Phe Asn

[illegible]

<400> 6622

Arg	Thr	Leu	Thr	Pro	Asp	Ile	Ser	Pro	Asn	Met	Leu	Asn	Asp	Val	Phe
1				5					10					15	
Ile	Leu	Thr	Gln	Ile	Lys	Glu	Gly	Asn	Ile	Lys	Ala	Phe	Glu	Thr	Leu
			20					25					30		
Phe	Arg	Gln	Tyr	Tyr	Thr	Pro	Leu	Arg	Leu	Tyr	Ala	Ala	Ser	Ile	Thr
			35				40					45			
Gly	Glu	Pro	Asp	Val	Ala	Glu	Ile	Val	Glu	Glu	Leu	Phe	Tyr	Val	
			50			55				60					
Phe	Trp	Lys	Asp	Arg	Glu	Lys	Leu	Glu	Ile	Phe	His	Ser	Val	Lys	Asn
65				70						75				80	
Tyr	Leu	Tyr	Arg	Ser	Val	Arg	Asn	Arg	Ser	Ile	Gln	Tyr	Cys	Glu	His
				85					90					95	
Gln	Asp	Val	Arg	Arg	Arg	Tyr	Gln	Asp	Ala	Ile	Leu	Ser	Val	Pro	Val

100	105	110
Asn Ile Ala Ser Pro Asp Pro Gln Glu Gln Ile Glu Tyr Lys Glu Leu		
115	120	125
Gln Gln Ile Ile Asn Arg Thr Leu Glu Lys Leu Pro Glu Arg Arg Leu		
130	135	140
His Ile Phe Arg Leu His His Thr Glu Gly Lys Lys Tyr Ser Glu Ile		
145	150	155
Ala Ser Leu Leu Ser Leu Ser Val Lys Thr Val Glu Lys Glu Met Thr		
165	170	175
Arg Ala Leu Arg Thr Leu Arg Lys Glu Ile Glu Asn Tyr Ile Gln Ile		
180	185	190
Ser		

<210> 6623
 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 6623
Arg Lys Ala Thr Pro Tyr Thr Ile Asp Thr Asp Gly Gly Ser Arg Cys
1 5 10 15
Leu Phe Ile Ser Glu Lys Val Met Glu Val Phe Asp Asp Gly Phe Asp
20 25 30
Tyr Arg Glu Val Ala Asn His Lys Glu Leu Thr Asp Leu Thr Val Ala
35 40 45
Leu Phe Ala Gly Met Ile Ser Ala Gln Pro Pro Arg Thr Ala Ala Met
50 55 60
Glu Val Pro Val Ala Cys Leu Arg Glu Asp Ala Arg Thr Gly Thr Asn
65 70 75 80
Gly Asn Gly His Ala Val Ala Pro Val Lys Arg Lys Gly
85 90

<210> 6624
 <211> 296
 <212> PRT
 <213> B.fragilis

<400> 6624
Ile Ala Glu Thr Met Glu Ile Phe Ser Leu Lys Glu His Val Ser Cys
1 5 10 15
Tyr Asn Tyr Ala Lys Cys Ile Arg Glu Gly Phe Ser Tyr Tyr Glu Ser
20 25 30
Ser Lys Thr Glu Thr Asp Glu Gly Pro His Glu Thr Asp Cys Ile Leu
35 40 45
Phe Val Met Glu Gly Glu Leu Glu Leu Ser Cys Asn Gly Glu Arg Ile
50 55 60
Lys Leu Pro Ala Gly Asn Met Ile Cys Cys Ser Arg Glu Ser Met Tyr
65 70 75 80
Arg Val Phe Ser Gln Gly Lys Met Ser Ile Val Ile Ala Gln Phe Asp
85 90 95
Asn Ala Val Gln Ser Cys Glu Lys Val Ser Phe Ser Gln Leu Asn Ser
100 105 110
Leu Asn Ser Ser Gly Glu Lys Gly Ile Tyr Pro Leu Glu Ile Arg Asp
115 120 125
Arg Leu Gln Leu Phe Leu Lys Leu Leu Ile Gly Tyr Leu Gly Asp Gly
130 135 140
Ala Ser Cys Val His Phe His Glu Thr Lys Leu Lys Glu Leu Phe Trp
145 150 155 160

Asn Ile Arg Phe Tyr Tyr Thr Arg Thr Glu Gln Ala Ser Phe Phe Arg
 165 170 175
 Pro Ile Leu Gly Asn Asp His Glu Phe Lys Lys Lys Val Leu Asp Asn
 180 185 190
 Tyr Arg Asn Ala Arg Thr Val Lys Glu Leu Ala Gln Met Cys Glu Ser
 195 200 205
 Ser Leu Ser Thr Phe Lys Arg Lys Phe Phe Lys Glu Phe Arg Glu Pro
 210 215 220
 Ala Ser Glu Trp Leu Gln Lys Gln Met Asn Ser Ile Ile Lys Tyr Lys
 225 230 235 240
 Leu Ala Asp Glu Asp Ile Pro Ile Arg Asn Ile Ala Asp Glu Leu His
 245 250 255
 Phe Ser Ser Gln Pro Gln Phe Cys Arg Tyr Cys Lys Arg Asn Phe Gly
 260 265 270
 Tyr Thr Pro Gly Glu Trp Arg Lys Leu Leu Lys Asn Arg Asp Lys Thr
 275 280 285
 Pro Arg Arg Pro Ser Gly Arg Val
 290 295

<210> 6625

<211> 123

<212> PRT

<213> B.fragilis

<400> 6625

Pro Tyr Arg Thr Arg Gln Ser Leu Gln Gln Ile Glu Cys Arg Leu Met
 1 5 10 15
 Ile Lys Cys Asp Pro Leu Cys Gly Asn Ser Thr Ile Ser Lys Val Ser
 20 25 30
 Gly Gly Ile Cys Lys Thr Thr Lys Val Asn Phe Pro Val Tyr Gly Leu
 35 40 45
 Ser Glu Asn Lys Arg Thr Arg Tyr Pro Met Ile Ala Ala Leu Ile Asp
 50 55 60
 Arg Phe Asn Arg Lys Phe Leu Ala Ile His Met Leu Pro Tyr Leu Ile
 65 70 75 80
 Leu Thr Ile Glu Tyr Ile Ala Arg Arg Glu Ile Leu Ile Asp Ser His
 85 90 95
 Leu Val Leu Tyr Ile Leu Ile Gly Cys Leu Ala Val Glu Ala Asp Met
 100 105 110
 Gly Ala Val Ile Pro Tyr Val Asp Ser Gly Gly
 115 120

<210> 6626

<211> 162

<212> PRT

<213> B.fragilis

<400> 6626

Ile Ile Met Thr Ser Lys Asp Phe Ile Glu Ala Glu Ala Gly Asn Asn
 1 5 10 15
 Gly Ser Ile Ile Leu Tyr Arg Glu Gly Leu Phe Trp Lys Ala Tyr Glu
 20 25 30
 Lys Ser Ala Tyr Ala Val Cys Thr Gln Ile Lys Pro Leu Lys Ala Ile
 35 40 45
 Lys Arg Arg Leu Lys Ser Leu Gly Gly Gly Glu Ile Val Ser Val Gly
 50 55 60
 Phe Pro Cys Lys His Glu Gln Lys Tyr Ile Gly Ser Leu Glu His Met
 65 70 75 80
 Glu Thr Met Pro Asp Arg Leu Val Leu Arg Thr Leu Lys Pro Ile Asp

				85					90					95			
Gly	Gln	Arg	Phe	Glu	Glu	Trp	Lys	Gln	Glu	Leu	Ser	Ser	Glu	His	Ser		
			100					105					110				
Val	Val	Gly	Arg	Arg	Asp	Ala	Cys	Val	Gln	Asn	Leu	Ser	Arg	Ser	Asn		
		115					120					125					
Ile	Pro	His	Gly	Glu	Leu	Ile	Met	Arg	Ile	Arg	Met	Phe	Asn	Leu	Ala		
	130					135					140						
Glu	Ser	Thr	Pro	Met	Asp	Cys	Met	Leu	Phe	Val	Asn	Glu	Leu	Lys	Lys		
145					150					155					160		
Met	Leu																

<210> 6627

<211> 63

<212> PRT

<213> B.fragilis

<400> 6627

Ala	Val	Ile	Ala	Phe	Cys	Lys	Ile	Glu	Thr	Ile	Ile	Lys	Ile	Ser	Tyr		
1				5				10					15				
Leu	Gln	Val	Thr	Gly	Glu	Glu	Val	Tyr	Arg	Ser	Leu	Ser	Thr	Tyr	Pro		
			20					25				30					
His	Gly	Leu	Val	Gly	Leu	Val	Asp	Glu	Pro	Asn	Trp	Ile	Gln	Lys	Phe		
	35						40					45					
Arg	Asp	Phe	Cys	Cys	Leu	Tyr	Asn	Tyr	Lys	Asn	His	Ala	Ile	Phe			
	50					55					60						

<210> 6628

<211> 428

<212> PRT

<213> B.fragilis

<400> 6628

Cys	Phe	Val	Ala	Phe	Met	Arg	Phe	Leu	Gln	Pro	Phe	Ser	Tyr	Lys	Gln		
1				5				10					15				
Leu	Ile	Tyr	Ile	Ile	Ile	Cys	Asn	Ser	Phe	Ile	Val	Met	Ala	Thr	Val		
			20					25				30					
Lys	Thr	Val	Leu	Val	Lys	Gly	Arg	Cys	Asn	Ser	Arg	Gly	Ala	Tyr	Pro		
	35						40					45					
Leu	Ala	Val	Gln	Val	Leu	His	Lys	Arg	Lys	Lys	Lys	Val	Phe	Tyr	Thr		
	50					55					60						
Gly	Tyr	Ser	Ile	Glu	Pro	Cys	Gln	Phe	Asp	Ser	Ile	Ser	Gly	Arg	Val		
65					70				75					80			
Ile	Phe	Asn	Gly	Met	Tyr	Thr	Met	Glu	Thr	Ile	Arg	Arg	Met	Asn	Arg		
				85					90					95			
Val	Cys	Arg	Lys	Ile	Ser	Lys	Val	Leu	Asp	Lys	Ala	Ile	Asp	Ile	Leu		
			100					105					110				
Glu	Lys	Gly	Asp	Ser	Glu	Tyr	Thr	Thr	Cys	Asp	Ile	Ser	Arg	Ile	Tyr		
		115					120					125					
Glu	Thr	Leu	Thr	Gly	Lys	Val	Gly	Phe	Tyr	Ser	Tyr	Phe	Gln	Glu	Arg		
	130					135					140						
Ile	Arg	Val	Leu	Phe	Asp	Thr	Gly	His	Glu	Gly	Thr	Ala	Lys	Ala	Tyr		
145					150					155					160		
Glu	Ser	Thr	Leu	His	Ser	Met	Gln	Arg	His	Leu	Cys	Glu	Ser	Asp	Phe		
			165						170					175			
Pro	Phe	Pro	His	Leu	Ser	Ser	Arg	Leu	Val	Ile	Lys	Tyr	Arg	Asp	Ala		
			180					185					190				
Leu	Gln	Glu	Ala	Gly	Val	Gly	Lys	Asn	Thr	Ile	Gly	Phe	Tyr	Leu	His		
			195				200						205				

Asn Met Lys Ala Val Tyr Arg Arg Gly Cys Leu Glu Leu Asn Leu Val
 210 215 220
 Phe Pro Ser Pro Phe Ser Asp Ile Arg Ile Arg Ser Glu Lys Thr Val
 225 230 235 240
 Lys Gln Ser Leu Pro Met Asn Gln Val Arg Ser Leu Ala Arg Leu Ser
 245 250 255
 Leu Ser Ala Gly Thr Pro Glu Cys Leu Ala Arg Asp Ile Phe Ile Phe
 260 265 270
 Ser Ile Tyr Thr Arg Gly Met Ser Phe Val Asp Ile Ala Leu Leu Lys
 275 280 285
 Lys Ser Asp Val Phe Pro Gly Val Ile Arg Tyr Arg Arg His Lys Thr
 290 295 300
 Gly Gln Leu Leu Glu Ile Gly Ile Asn Arg Gln Ile Gln Ser Leu Leu
 305 310 315 320
 Asp Arg Tyr Gly Asp Thr Ala Gly Asn Tyr Leu Phe Pro Leu Val Asp
 325 330 335
 Glu Ser Glu Thr Pro Tyr Ser Gly Tyr Lys Lys Ala Tyr Asn Lys Met
 340 345 350
 Arg Tyr Ala Leu Lys Lys Val Ser Lys Ser Ile Gly Met Asn Pro Pro
 355 360 365
 Leu Arg Leu His Ala Ala Arg His Cys Trp Ala Thr Met Ala Arg Glu
 370 375 380
 Asn Gly Thr Pro Leu His Thr Ile Ser Glu Cys Leu Gly His Ser Ser
 385 390 395 400
 Glu Lys Met Thr Arg Ile Tyr Leu Lys Glu Leu Asp Arg Ser Val Leu
 405 410 415
 Asp Glu Val Asn Asn His Ile Ala Asp Asn Ile Cys
 420 425

<210> 6629

<211> 523

<212> PRT

<213> B.fragilis

<400> 6629

Thr Asp Thr Ala Met Glu Ile Arg Lys Gln Tyr Phe Lys Glu Lys Gln
 1 5 10 15
 Tyr Met Trp His Lys Val Arg Glu Leu Gln Leu Lys Gly Leu Asn Lys
 20 25 30
 Thr Gln Ile Gly Ile Tyr Leu Gly Val Asn Arg Lys Thr Val Arg Arg
 35 40 45
 Tyr Leu Asn Met Thr Met Glu Glu Phe Val Lys Lys Gln Ser Ser His
 50 55 60
 Arg Lys Tyr Arg Leu Lys Leu Glu Asn Tyr Glu Gln Tyr Val Arg Ala
 65 70 75 80
 Asn Leu Glu Glu Tyr Pro Tyr Ile Ser Ala Ala Arg Ile His Asp Trp
 85 90 95
 Leu Lys Glu Cys Tyr Pro Asp Phe Pro Arg Val Cys Asn Arg Thr Val
 100 105 110
 Ser Gly Phe Val Glu Arg Val Arg Lys Lys Tyr Gly Ile Gly Lys Lys
 115 120 125
 Val Glu Thr His Lys Arg Asn Tyr Glu Lys Gln Pro Asp Thr Pro Tyr
 130 135 140
 Gly Glu Tyr Ala Gln Ala Asp Phe Gly Glu Lys Trp Met Arg Thr Glu
 145 150 155 160
 Asn Gly Lys Ser Ile Lys Val Tyr Phe Phe Ala Ile Val Leu Ser Arg
 165 170 175
 Ser Arg Tyr Lys Phe Ile Tyr Phe Ser Arg Arg Pro Phe Asp Thr Gly
 180 185 190

Leu Ala Val Tyr Ala His Glu Leu Ala Phe Glu Tyr Phe Gly Gly Arg
 195 200 205
 Pro Gln Lys Ile Ile Tyr Asp Gln Asp Lys Val Leu Ile Ala Arg Ala
 210 215 220
 Asn Met Gly Asp Leu Ile Leu Thr Gly Lys Phe Gln Ala Phe Val Lys
 225 230 235 240
 Glu Gln His Phe His Pro Val Phe Cys His Lys Ala Asp Pro Glu Ser
 245 250 255
 Lys Gly Lys Val Glu Asn Val Val Lys Tyr Val Lys Thr Asn Phe Leu
 260 265 270
 Thr Ala Arg Ile Phe Gln Asn Val Asp Arg Leu Asn Glu Glu Ala Arg
 275 280 285
 Leu Trp Leu Glu Arg Thr Gly Asn Gly Lys Glu His Gly Thr Thr His
 290 295 300
 Arg Ile Pro Leu Glu Glu Phe Ala Gln Glu Arg Glu Tyr Leu Val Pro
 305 310 315 320
 Tyr His Gly Thr Pro His Ser Pro Gly Gly Glu Met Lys Glu Tyr His
 325 330 335
 Val Arg Lys Asp Asn Thr Val Gln Tyr Arg Gly Asn Tyr Tyr Ser Leu
 340 345 350
 Pro Cys Gly Thr Tyr Arg Gly Gly Glu Thr Thr Val Trp Leu His Glu
 355 360 365
 Thr Asp Gly Cys Leu Glu Leu Tyr Asn Lys Glu Thr Gly Lys Leu Val
 370 375 380
 Cys Arg His Asp Leu Cys Glu Leu Lys Gly Lys Thr Ile Tyr Gly Glu
 385 390 395 400
 Gly His Arg Arg Gln Arg Asn Ile Gly Ala Gln Lys Leu Ala Glu Arg
 405 410 415
 Ile Leu Ile Tyr Val Ser Tyr Asn Arg Glu Val Ala Leu Trp Leu Glu
 420 425 430
 Asn Leu Gln Arg Arg Lys Glu Arg Tyr Tyr Arg Glu Asn Leu Glu Val
 435 440 445
 Ile Leu Arg Ile Ile Pro Gly Tyr Asp Lys Ala Ile Leu Thr Glu Ala
 450 455 460
 Val Ser Val Cys Leu Asp Lys Gly Ile Tyr Asn Gly Glu Ser Val Lys
 465 470 475 480
 Ser Leu Cys Gly His Ile Trp Lys Lys Lys Met Gly Glu Ser Asp Val
 485 490 495
 Gly Lys Asn Pro Ala Ser Arg Thr Gln Ser Thr Gly Leu Val Lys Thr
 500 505 510
 Tyr Asn Glu Ile Phe Arg Asn Asn Gly Lys Val
 515 520

<210> 6630

<211> 478

<212> PRT

<213> B.fragilis

<400> 6630

Gln Thr Asp Ala Pro Leu Ser Thr Leu Ile Phe Lys Thr Phe Ile Thr
 1 5 10 15
 Met Asn Gln Thr Val Thr Glu Asn His Arg Leu Arg Asp Thr Ile Ile
 20 25 30
 Ile Gly Ala Gly Leu Thr Gly Leu Thr Thr Ala Tyr Cys Leu Thr Arg
 35 40 45
 Lys Gly Cys Asp Ile Glu Val Ile Glu Gln Ser Pro Cys Val Gly Gly
 50 55 60
 Gln Ile Arg Thr Tyr His Glu Asn Gly Phe Thr Phe Glu Ser Gly Pro
 65 70 75 80

[illegible]

<400> 6631
Gly Thr Ser Ala Ile Pro Thr Asp Leu Thr Val Ser Phe Val Ala Leu
1 5 10 15

Thr His Val Ile His Thr Ser Lys Ser Glu Asn Gln Arg Leu Lys Met
 20 25 30
 Lys Arg Arg Lys Glu Pro Thr Glu Phe Arg Leu Gly Thr Ile Ile Val
 35 40 45
 Pro Tyr Ile Glu Met Phe Asp Glu Ala Val Ala Ile Arg Thr Asp Gly
 50 55 60
 Val Arg Leu Ile Ile Asp Thr Tyr Phe Asn Asp Leu Ser Ile Asp Asp
 65 70 75 80
 Ile Pro Gln Gln Tyr Val Phe Thr Trp Asn Trp Leu Gly Lys Gly Tyr
 85 90 95
 Lys Phe Thr Val Ile Asn His Leu Tyr Lys Ser Ser Lys Ala Lys Thr
 100 105 110
 Lys Arg Gly Phe Lys Lys Leu Leu Ala Glu Ala Leu Pro Leu Leu Ile
 115 120 125
 Asp Pro Lys Asn Gly Leu Ile Lys Lys Pro Glu Leu Ser Pro Ala Asp
 130 135 140
 Leu Asn Arg Phe Asn Thr Val Leu Lys Thr Cys Ser Lys
 145 150 155

<210> 6632

<211> 88

<212> PRT

<213> B.fragilis

<400> 6632

Glu Leu Phe Tyr Arg Asp Ile Tyr Leu Leu Leu Thr Ser Cys Gln Leu
 1 5 10 15
 Ile Asn Gln Asn Pro Phe Thr Tyr Glu Leu Leu Val Pro Ile Leu His
 20 25 30
 Gln Asp Thr Phe Val Gln Met Val Leu Arg Gly Ile Thr Tyr Leu Pro
 35 40 45
 Leu Leu Ile Leu Val Met Val Val Met Asp Gly Leu Leu Cys Ile Ile
 50 55 60
 Gly Leu Leu Pro Phe Ala Asp Arg Asn Lys Gly Ile Gly His Glu Tyr
 65 70 75 80
 Asp Cys Asn Glu Leu Phe Gly Arg
 85

<210> 6633

<211> 62

<212> PRT

<213> B.fragilis

<400> 6633

Asn Leu Leu Tyr Gly Phe Thr Gln Leu Phe Phe Arg Arg Asn Tyr Ile
 1 5 10 15
 Glu Ile Phe Pro Lys Ala Phe Val Val Tyr Lys Trp Asn Phe Arg Lys
 20 25 30
 Asp Gly Met Tyr Gly Gln Pro Leu Ile Met Val Glu Thr Ala Asp Ile
 35 40 45
 Ile Arg Phe Tyr Leu Ala Gly Asp His Phe Lys Pro Cys Met
 50 55 60

<210> 6634

<211> 67

<212> PRT

<213> B.fragilis

<400> 6634

Asn Tyr Asn Leu Gln Gly Gln Arg Ala Gln Asp Val Glu Ala Val Phe
 1 5 10 15
 Gly Asn Leu Lys Thr Thr Asn Asn Pro Arg Arg Phe Tyr Leu Arg Arg
 20 25 30
 Val Glu Lys Val Asp Ile Glu Phe Gly Leu Leu Ala Ile Ala Tyr Asn
 35 40 45
 Leu Ala Lys Val Ala Ser Ser Thr Thr Phe Cys Ala Pro Lys Asp Ile
 50 55 60
 Leu Lys Gly
 65

<210> 6635

<211> 527

<212> PRT

<213> B.fragilis

<400> 6635

Ser Arg Asn Gln Asn Pro Lys Thr Met Lys Ala Ser Lys Ser Leu Cys
 1 5 10 15
 Leu Gln Cys Leu Phe Thr Cys Leu Leu Leu Phe Ile Ala Ala Arg Val
 20 25 30
 Lys Ala Asp Asp Ser Gly Ile Leu Asp Arg Ile Ile Arg Leu Pro Lys
 35 40 45
 Ser Glu Met Thr Val Tyr Lys Leu Leu Ser Lys Ile Thr Glu Glu Thr
 50 55 60
 Gly Tyr Leu Phe Ile Tyr Asp Ser Lys Leu Val Asp Asn Glu Arg Thr
 65 70 75 80
 Val Lys Leu Lys Gly Gly Lys Gln Thr Val Arg Gln Ala Ile Tyr Ser
 85 90 95
 Ile Ile Gly Asn Asp Asn Leu Lys Leu Arg Ser Val Asp Lys His Ile
 100 105 110
 Ile Ile Tyr Arg Pro Glu Thr Ala Leu Ser Ile Ser Lys Glu Glu Gly
 115 120 125
 Leu Cys Arg Asp Ser Thr Leu Ser Phe Thr Leu Glu Gly Thr Leu Ile
 130 135 140
 Asp Gln Leu Ser Arg Glu Pro Ile Pro Tyr Ala Thr Val Gly Ala Glu
 145 150 155 160
 Gly Ser Ser Ile Gly Ser Val Thr Asn Gln Asn Gly Ser Phe Arg Leu
 165 170 175
 His Leu Pro Asp Ser Leu Arg Asn Gly Arg Ile Arg Phe Ser His Leu
 180 185 190
 Gly Tyr Val Pro Gln Thr Thr Asp Ala Ser Leu Leu Ala Gly Arg Asn
 195 200 205
 Gly Thr Phe Ala Leu Glu Pro Lys Val Ile Pro Leu Gln Glu Val Ile
 210 215 220
 Val Arg Ile Val Asn Pro Val Arg Leu Leu Arg Glu Met Leu Gln Phe
 225 230 235 240
 Arg Lys Lys Asn Tyr Ser Lys Val Pro Val Tyr Leu Thr Ser Phe Tyr
 245 250 255
 Arg Glu Gly Ile Glu Gln Lys Asn Arg Phe Val Ser Leu Thr Glu Gly
 260 265 270
 Ile Phe Lys Ile Tyr Lys Ala Ser Ser Ser Thr Pro Glu Lys Thr Asp
 275 280 285
 Gln Val Lys Leu Leu Lys Met Arg Arg Ile Thr Asn Gln Ala Val Lys
 290 295 300
 Asp Thr Leu Ile Ala Lys Met Lys Ser Gly Ile His Ala Ser Ile Glu
 305 310 315 320
 Leu Asp Leu Ile Lys Ser Leu Pro Asp Phe Leu Leu Pro Asp Ser Lys
 325 330 335

Glu Cys Val Tyr Val Tyr Thr Ser Ser Asp Leu Ala Ile Ile Asp Asn
 340 345 350
 Arg Leu Ala His Val Val Ser Phe Glu Gln Arg Pro Ser Ile Lys Tyr
 355 360 365
 Pro Tyr Tyr Cys Gly Glu Leu Tyr Ile Asp Ser Glu Asn Ser Ala Leu
 370 375 380
 Leu Arg Ala Arg Phe Glu Leu Thr Pro Arg Tyr Ile His Lys Ala Ala
 385 390 395 400
 Asn Met Leu Val Glu Lys Arg Ser Arg Asn Ile Arg Ile Ile Pro Gln
 405 410 415
 Lys Val Val Tyr Thr Val Ser Tyr Lys Pro Trp Lys Gln Thr Tyr Tyr
 420 425 430
 Ile His His Val Arg Gly Asp Leu His Phe Lys Ile Lys Gln Lys Asn
 435 440 445
 Lys Trp Leu Asn Asn Thr Ile Leu His Thr Trp Phe Glu Met Val Thr
 450 455 460
 Cys Lys Ile Glu Thr Asp Asn Val Ser Arg Phe Asp His Asn Glu Arg
 465 470 475 480
 Leu Ser Val His Thr Ile Phe Ala Glu Ile Pro Phe Val Tyr Asp Lys
 485 490 495
 Ser Phe Trp Glu Asp Phe Asn Val Ile Pro Pro Glu Lys Glu Leu Ser
 500 505 510
 Glu Ala Ile Glu Lys Ile Ser Ser Lys Ile Glu Glu Thr Glu Asn
 515 520 525

<210> 6636

<211> 187

<212> PRT

<213> B.fragilis

<400> 6636

Lys Ile Lys His Leu Ile Thr Met Ile Val Gln Asp Leu Asn Phe Asp
 1 5 10 15
 Gln Thr Val Ala Met Ala Lys Ala Lys Ala Glu Ser Met Ile Gln Asn
 20 25 30
 Gly Leu Tyr Ser Arg Phe Gly Leu Ser Glu Lys Glu Arg Leu Asp Lys
 35 40 45
 Ala Leu Leu Gly Cys Ile Gly Glu Leu Ala Phe Gln Lys His Leu Lys
 50 55 60
 Asn Leu Gly Ile Pro Phe Glu Leu Asp Gln Thr Asp Phe Gln Ser His
 65 70 75 80
 His Ser Asp Glu Phe Asp Val Lys Val Asn Gly Ala Lys Ile Asp Ile
 85 90 95
 Lys Val Ala Lys Lys Thr Thr Ala Asn Pro Pro Thr Asp Asn Trp Thr
 100 105 110
 Tyr Gly Tyr Pro Gln Glu Gln His Pro Glu Thr Lys Asp Tyr Val Val
 115 120 125
 Val Gly Trp Val Asp Phe Asn Arg Lys Glu Val Gly Phe Tyr Gly Trp
 130 135 140
 Ile Arg Gly Lys Gln Ile Val Glu Phe Lys Val Val Thr Gln Asn Ser
 145 150 155 160
 Tyr Ala Lys Tyr Pro Tyr Leu Thr Pro Asn His Glu Phe Lys Trp Gly
 165 170 175
 Cys Leu Thr Lys Asp Leu Asn Glu Ile Leu Lys
 180 185

<210> 6637

<211> 434

<212> PRT

<213> B.fragilis

<400> 6637

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Ile Thr Met His Met Phe Lys Lys Leu Leu Ile Leu Leu Leu Ser Leu
1      5      10      15
Leu Asp Cys Ile Pro Val Phe Cys Gly Gly Asp Thr Leu His Tyr Arg
20      25      30
Phe Tyr Phe Arg Val Gly Ala Ser Leu Asp Leu Ser Tyr Arg Asp
35      40      45
Asn Gly Leu Arg Leu Asp Ser Leu Leu Ser Val Ile His Ser Arg Gln
50      55      60
Ala His Ala Val Leu Arg Arg Val Ser Leu Tyr Ser Ser Ala Ser Pro
65      70      75      80
Glu Gly Gly Ser Ala Leu Asn Lys Arg Leu Ser Asp Arg Arg Leu Ala
85      90      95
Ser Leu Arg Thr Val Ile Gln His Arg Leu Ala Ile Pro Asp Ser Ile
100     105     110
Leu Ile Ser Phe Ser Leu Gly Glu Asp Trp Asp Gly Leu Ser Ser Leu
115     120     125
Val Glu Gly Ser Asp Ile Pro Tyr Arg Gly Glu Val Leu Arg Ile Leu
130     135     140
Arg Asp Thr Pro Val Trp Val Ile Arg Asn Gly Ile Val Val Asp Ser
145     150     155     160
Arg Lys Arg Gln Leu Met Asn Leu Arg Gly Gly Arg Val Trp Arg Tyr
165     170     175
Met His Glu His Phe Phe Pro Glu Leu Arg Asn Ser Ser Val Ile Glu
180     185     190
Cys Glu Phe Glu Pro Phe Val Ala Glu Asn Asp Asp Val Pro Ala Pro
195     200     205
Ser Gln Lys Gly Val Cys Pro Pro Asp Thr Val Ile Leu Arg Asp Thr
210     215     220
Val Glu Arg Ala Ile Met Met Arg Asp Thr Val Glu Val Pro Val Pro
225     230     235     240
Ile Ala Asn Ile Pro Lys Pro Phe Tyr Met Gly Leu Lys Thr Asn Leu
245     250     255
Leu Tyr Asp Ala Leu Leu Val Pro Asn Ile Gly Val Glu Phe Tyr Leu
260     265     270
Gly Lys Gly Trp Ser Leu Gly Gly Asn Trp Met Tyr Ala Trp Trp Asn
275     280     285
Asn Asp Arg Arg His Arg Tyr Trp Arg Val Tyr Gly Gly Glu Ile Gly
290     295     300
Leu Arg Lys Tyr Phe Ala Pro Arg Ala Ala Tyr Thr Pro Phe Ile Gly
305     310     315     320
His His Val Gly Leu Tyr Gly Gln Met Leu Thr Tyr Asp Phe Glu Phe
325     330     335
Gly Gly Lys Gly Tyr Met Gly Gly Arg Pro Gly Gly Ser Leu Trp Glu
340     345     350
Lys Ser Asn Tyr Gly Phe Gly Leu Glu Tyr Gly Tyr Ser Leu Ala Ile
355     360     365
Gly Arg Arg Leu Asn Leu Asp Phe Ser Leu Gly Val Gly Tyr Leu Gly
370     375     380
Gly Thr Tyr Tyr Glu Tyr Ala Pro Met Asp Gly His Tyr Val Trp Glu
385     390     395     400
Ala Thr Lys Asn Arg Arg Trp Phe Gly Pro Thr Lys Ala Glu Val Ser
405     410     415
Leu Val Trp Leu Leu Gly Arg Gly Asn Tyr Asn Asp Lys Lys Gly Gly
420     425     430
Arg Arg

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<210> 6638
 <211> 324
 <212> PRT
 <213> B.fragilis

<400> 6638
 Arg His Met Gln Tyr Val Gly Ile Gln Thr Gln Gln Ser Arg Asn Asn
 1 5 10 15
 Leu Arg Ser Gly Ile Leu Leu Ile Leu Phe Pro Cys Leu Val Ala Val
 20 25 30
 Leu Thr Tyr Leu Phe Cys Tyr Leu Leu Ile Thr Phe Thr Val Glu Asp
 35 40 45
 Asp Tyr Gly Gln Tyr Asn Thr Leu Ala Met Thr Asn Gln Met Phe Ile
 50 55 60
 Asn Leu Ile Pro Tyr Ile Ile Gly Gly Val Leu Val Trp Phe Ile Ile
 65 70 75 80
 Ala Tyr Phe Thr Asn Ser Ser Ile Ile Lys Ala Ala Thr Gly Ala Arg
 85 90 95
 Pro Leu Glu Arg Lys Glu Asn Lys Arg Ile Tyr Asn Leu Val Glu Asn
 100 105 110
 Leu Cys Met Ser Gln Gly Met Lys Met Pro Lys Ile Asn Ile Ile Asp
 115 120 125
 Asp Asp Ser Leu Asn Ala Tyr Ala Ser Gly Ile Asn Glu Gln Thr Tyr
 130 135 140
 Thr Val Thr Leu Ser Lys Gly Ile Ile Glu Lys Leu Asn Asp Glu Glu
 145 150 155 160
 Leu Glu Gly Val Ile Ala His Glu Leu Thr His Ile Arg Asn His Asp
 165 170 175
 Val Arg Leu Leu Ile Ile Ser Ile Val Phe Val Gly Ile Phe Ser Met
 180 185 190
 Leu Ala Gln Ile Ala Leu Arg Ser Val Tyr Tyr Ser Ser Trp Thr Arg
 195 200 205
 Ser Arg Asn Asp Lys Asn Asn Gly Ala Ile Leu Ile Leu Val Leu Ala
 210 215 220
 Met Ile Val Ala Ala Ile Gly Tyr Phe Phe Ala Thr Leu Met Arg Phe
 225 230 235 240
 Ala Ile Ser Arg Lys Arg Glu Tyr Met Ala Asp Ala Gly Ala Ala Glu
 245 250 255
 Met Thr Lys Asn Pro Leu Ala Leu Ala Ser Ala Leu Arg Lys Ile Ser
 260 265 270
 Ala Asp Pro Asp Ile Glu Ala Val Glu Arg Glu Asp Val Ala Gln Leu
 275 280 285
 Phe Ile Gln His Pro Gly Lys Gln Ala Lys Ser Ala Leu Ser Gly Leu
 290 295 300
 Ser Gly Leu Phe Ala Thr His Pro Pro Ile Glu Lys Arg Ile Ala Ile
 305 310 315 320
 Leu Glu Gln Phe

<210> 6639
 <211> 133
 <212> PRT
 <213> B.fragilis

<400> 6639
 Gln Glu Gln Gln Asn Leu Phe Pro Glu Asn Gln Gly Ser Lys Gly Thr
 1 5 10 15
 Val Trp Leu Tyr Leu Glu Ser Lys Arg Gly Ile Pro His Leu His Gly

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<210> 6640
<211> 322
<212> PRT
<213> B.fragilis
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1	Arg	Arg	Gln	Thr	Met	Asn	Arg	Ile	Leu	Thr	Thr	Asn	His	Ile	Leu
5				5					10					15	
His	Val	Val	Ser	Val	Phe	Thr	Ile	Leu	Leu	Leu	Thr	Ser	Cys	Glu	His
20			20					25				30			
Lys	Asp	Leu	Cys	Tyr	Asp	His	Ser	Asp	Ala	Thr	Glu	Ile	Gln	Val	Val
35			35				40					45			
Phe	Asp	Trp	Thr	Asn	Ala	Pro	Asp	Ala	Thr	Pro	Glu	Thr	Met	Arg	Leu
50						55					60				
Tyr	Leu	Phe	Pro	Val	Gly	Gly	Thr	Pro	His	Thr	Tyr	Glu	Phe	Pro	
65					70				75					80	
Asp	Tyr	Arg	Gly	Gly	Arg	Ile	Asn	Val	Pro	Ala	Gly	Arg	Tyr	Lys	Ala
85				85				90						95	
Leu	Cys	Ile	Asn	Ser	Asp	Thr	Glu	Ser	Ile	Leu	Tyr	Arg	Asn	Ile	Asp
100			100					105					110		
Ser	Phe	Asp	Ser	Phe	Glu	Ala	Tyr	Ala	Ala	Asp	Gly	Val	Leu	Asn	Val
115							120					125			
Arg	Ser	Ser	Ser	Ser	Pro	Arg	Ala	Glu	Gly	Thr	Ala	Asp	Glu	Arg	Ile
130						135					140				
Ala	Arg	Ser	Pro	Asp	Arg	Phe	Tyr	Ser	Ala	Arg	Leu	Asp	Asp	Val	Thr
145				150						155					160
Ile	Glu	Leu	Ser	Lys	Glu	Asn	Arg	Thr	Val	Thr	Leu	Tyr	Pro	Glu	Pro
165				165					170					175	
Ser	Val	Cys	Arg	Cys	Arg	Val	Thr	Ile	Thr	Asn	Val	Ser	Asn	Leu	Lys
180			180					185					190		
Tyr	Ile	Ser	Ser	Asp	Gly	Ile	Ser	Gly	Ala	Leu	Ser	Gly	Met	Cys	Gly
195							200					205			
Gly	Leu	Leu	Val	Gly	Arg	Asn	Glu	Ala	Thr	Ser	Asp	Pro	Val	Thr	Val
210						215					220				
Pro	Phe	Gly	Val	Val	Ser	Asp	Gly	Ala	Ser	Thr	Leu	Thr	Ala	Asp	Phe
225				230						235					240
Leu	Val	Phe	Gly	Gln	Ile	Gly	Pro	Ser	Gly	Tyr	Pro	Ala	His	Lys	Leu
245				245					250					255	
Val	Ile	Tyr	Ala	Ile	Met	Ser	Asp	Gly	Ser	Lys	Asn	Tyr	Tyr	Thr	Phe
260			260					265					270		
Asp	Val	Thr	Arg	Gln	Val	Asp	Glu	Ala	Ala	Asp	Ser	His	Asp	Ile	His
275			275				280					285			
Ile	Thr	Leu	Asp	Gly	Leu	Pro	Phe	Pro	Lys	Pro	Ile	Val	Asn	Gly	Gly

[illegible]

290 295 300
 Gly Phe His Pro Ala Val Asp Glu Trp Gln Asn Val Asp Val Asp Val
 305 310 315 320
 Ser Met

<210> 6641
 <211> 242
 <212> PRT
 <213> B.fragilis

<400> 6641
 Glu Arg Arg His Glu Met Lys Lys Val Tyr Thr Val Met Glu Tyr Val
 1 5 10 15
 Pro Leu Leu Ala Gly Met Leu Met Leu Leu Ser Ser Cys Gly His Lys
 20 25 30
 Asp Leu Cys Phe Asp His Asp Val His Ala Pro Lys Ser Glu Val Arg
 35 40 45
 Ile Glu Ala Arg Tyr Glu Lys Glu Trp Gln Tyr Thr His Glu Gly Ser
 50 55 60
 Thr Asp Trp Lys Ser His Ser Thr Trp Pro Glu Ser Phe Gly Met Glu
 65 70 75 80
 Tyr Asp Ala Leu Arg Pro Gly Ile Pro Asp Gly Leu Arg Val Gln Val
 85 90 95
 Tyr Asn Ala Asp Gly Ser Asp Glu Ile Ile Asn Thr Ala Pro Glu Gly
 100 105 110
 Asp Val Val Tyr Met Arg Pro Gly Glu His Ser Leu Leu Phe Tyr Asn
 115 120 125
 Asn Tyr Thr Glu Tyr Ile Val Phe His Glu Met Gln Ser Phe Ala Ser
 130 135 140
 Ala Lys Ala Thr Thr Arg Thr Arg Thr Arg Ser Ser Tyr Leu Gly Asn
 145 150 155 160
 Ser Tyr Met Glu Thr Ala Ser Glu Asn Thr Val Asn Gln Pro Asp Met
 165 170 175
 Leu Tyr Arg Ser Tyr Met Glu Ser Tyr Cys Gly Gly Thr Leu Asp Arg
 180 185 190
 Asn Arg Arg Asp Thr Arg His His Ala Pro Asp Gly Val His Leu Ser
 195 200 205
 Gly Thr Leu Arg Val Gln Pro Arg Gly Gly Ile Arg Val Ser Gly Thr
 210 215 220
 Arg Cys Leu Gly Trp Tyr Gly Ala Gly Gly Met Val Glu Gln Arg Thr
 225 230 235 240
 His Val

<210> 6642
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 6642
 Leu Trp Val Asn Phe Ser Val Phe Ile Phe Ala Ala Val Asn Lys Gln
 1 5 10 15
 Thr Thr Lys Pro Asp Leu Arg Asn Thr Val Ser Ile Thr Leu Lys Thr
 20 25 30
 Leu Glu Phe Cys Phe Pro Phe Phe Pro Ile His Ala Gly Thr Thr Thr
 35 40 45
 Phe Gln Lys Glu Ser Ile Trp Val Leu Ser Lys Gln Val Ile Pro Leu
 50 55 60

Ser Val Ala
65

<210> 6643
<211> 216
<212> PRT
<213> B.fragilis

<400> 6643
Cys Phe Pro Asn Arg His Lys Asp Ile Ile Leu Leu Tyr Asp Asp Thr
1 5 10 15
Ser Leu Lys Ile Gly Val Tyr Phe Leu Met Ile Cys Leu Thr Gly His
20 25 30
Gly Thr Lys Lys Ile Gly Arg Arg Asn His Asp Gly Lys Ser Gly Ile
35 40 45
Tyr Phe Leu Ser His Gly Ile Asn Asp Ile Gln Tyr Ile Thr Gly Glu
50 55 60
Ser Arg Asn Lys Lys Gln Glu Thr Arg Asn Lys Lys His Pro Glu Leu
65 70 75 80
Ile Phe His Ile Ile Lys Asp Asn Leu Leu Pro Ser Gly Leu Asp Ala
85 90 95
Thr Gly Ile Trp Asp Phe Met Arg Leu Thr Gln Glu Lys Ser Lys Lys
100 105 110
Val Lys Asn Ser Val Ile His Ile Glu Val Ser Arg Ala Pro Glu His
115 120 125
Thr Lys Asp Phe Thr Ile Asp Asp Trp Arg Arg Leu Trp Asp Asp Phe
130 135 140
Met Gly Glu Phe Asp Asn Ile Glu Leu Leu Asp Lys Asn Ser Lys Thr
145 150 155 160
Tyr Ser Pro Lys Thr Lys Ala Ala Arg Ala Arg Cys Gly Cys Ile Trp
165 170 175
Asn Pro Arg Glu Ala Phe Pro Ile Phe Thr Ala Arg Ser Ala Val Ser
180 185 190
Thr Asn Gly Glu Met Ser Thr Thr Thr Met Thr Tyr Thr Cys Glu His
195 200 205
Ser Gly Gln Pro Gly Val Trp Pro
210 215

<210> 6644
<211> 431
<212> PRT
<213> B.fragilis

<400> 6644
Ser Lys Asp Asn Met His Met Arg Gly Leu Ile Val Ser Ala Phe Leu
1 5 10 15
Leu Leu Gly Cys Ile Gln Ala Phe Gly Gln Glu Asn Arg Lys Glu Val
20 25 30
Cys Ile Gly Phe Pro Val Gly Asn Ser Thr Leu Asp Thr Ala Tyr Gly
35 40 45
Asn Asn Ala Ala Arg Leu Ser Glu Val Val Ser Phe Leu Glu Ser Val
50 55 60
Lys Lys Asp Ser Thr Leu Glu Leu Thr Gly Val Ser Phe Cys Gly Ser
65 70 75 80
Ala Ser Pro Glu Gly Phe Thr Val Asn Arg Met Leu Ala Glu Lys
85 90 95
Arg Arg Asn Ser Leu Glu Arg Tyr Val Arg Glu Arg Val Ser Leu Pro
100 105 110
Asp Gly Ile Ile Ser Arg Pro Glu Gly Phe Ile Ala Trp Glu Arg Leu

115 120 125
 Ala Glu Leu Val Glu Val Ser Asp Met Pro His Lys Glu Glu Ala Val
 130 135 140
 Asp Val Leu Arg Asn Val Pro Glu Phe Thr Tyr Gly Asn Lys Gly Val
 145 150 155 160
 Leu Val Asp Ser Arg Lys Lys His Leu Met Glu Leu Gln Tyr Gly Arg
 165 170 175
 Thr Trp His Tyr Met His Lys His Phe Asp Arg Ile Arg Asn Ala
 180 185 190
 Ser Val Ile Leu Val Thr Val Arg Gln Lys Pro Leu Ile Glu Glu Lys
 195 200 205
 Thr Val Val Lys Glu Glu Pro Val Val Pro Thr Pro Ala Asp Asp Thr
 210 215 220
 Thr Thr Val Val Glu Lys Ala Asp Thr Val Val Ala Val Ser Ser Glu
 225 230 235 240
 Thr Ser Lys Pro Phe Tyr Met Ala Leu Lys Thr Asp Met Leu Tyr Asp
 245 250 255
 Val Leu Ala Val Pro Asn Ile Gly Val Glu Phe Tyr Leu Gly Lys Asn
 260 265 270
 Trp Ser Ile Ser Gly Asn Trp Met Tyr Gly Trp Trp Lys Lys Asn Ser
 275 280 285
 Asn His Arg Tyr Trp Arg Val Tyr Gly Gly Asp Leu Ala Val Arg Tyr
 290 295 300
 Trp Leu Gly Lys Lys Ala His Glu Lys Pro Leu Thr Gly His His Ile
 305 310 315 320
 Gly Ile Tyr Gly Gln Ala Phe Thr Tyr Asp Phe Glu Trp Gly Gly Lys
 325 330 335
 Gly Tyr Met Gly Gly Glu Pro Gly Gly Met Leu Trp Asp Lys Thr Asn
 340 345 350
 Tyr Ala Ala Gly Val Glu Tyr Gly Tyr Ser Leu Pro Ile Ala Asn Arg
 355 360 365
 Leu Asn Ile Asp Phe Thr Leu Gly Val Gly Tyr Trp Gly Gly Lys Tyr
 370 375 380
 Tyr Glu Tyr Val Pro Leu Asp Ser His Tyr Val Trp Gln Ala Thr Lys
 385 390 395 400
 Asn Arg His Trp Phe Gly Pro Thr Lys Ala Glu Ile Ser Leu Val Trp
 405 410 415
 Leu Leu Gly Arg Gly Asn Ser Asn Asn Lys Lys Gly Gly Met Lys
 420 425 430

<210> 6645

<211> 197

<212> PRT

<213> B.fragilis

<400> 6645

Tyr Gln Cys Lys Asn Arg Lys Glu Ile Asn Met Thr Ile Arg Glu Phe
 1 5 10 15
 Lys Glu His Val Lys Thr Arg Lys Leu Leu Asp Thr Glu Glu Ile His
 20 25 30
 Gln Phe Met Asp Ile Met Ser Asn Glu Ala Arg Arg Ile Thr Phe Gln
 35 40 45
 Leu Asn Thr Thr Tyr His Thr Pro Asn Glu Val Arg Glu Leu Leu Ser
 50 55 60
 Glu Leu Phe Gly Tyr Arg Val Pro Ser Ser Phe Arg Val Phe Pro Pro
 65 70 75 80
 Phe Tyr Thr Asp Phe Gly Lys Asn Ile Thr Ile Gly Glu Asp Val Phe
 85 90 95
 Ile Asn Ala Cys Cys His Phe Gln Asp His Gly Gly Ile Thr Ile Gly

[illegible]

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<400> 6646
Ile Lys Asn Lys Lys Ile Asn Gly Met Asn Met Asn Lys Lys Met Tyr
1      5      10      15
Ile Leu Pro Gly Asp Glu Arg Ile Ala Ala Ser Asp Ala Lys Glu Phe
      20      25      30
Val His Glu Leu Arg Thr Gly Ser Trp Met Asp Ser Asn Cys Thr Asp
      35      40      45
Glu Gln Tyr Met Cys Asn Phe Ala Glu Arg Tyr Val Ile Gln Ala Gly
      50      55      60
Val Arg Ile Ala Thr Asp Thr Pro Glu Asn Phe Leu Ala Asp Leu Ile
65      70      75      80
Arg Thr Gly Tyr Ala Lys Glu Met
      85

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<400>	6647															
Asn	Met	Ile	Lys	Arg	Leu	Phe	Phe	Leu	Leu	Pro	Phe	Ser	Thr	Ile	Val	
1				5					10					15		
Ser	Ala	Asn	Glu	Pro	Asp	Thr	Ile	Gln	Val	Lys	Arg	Ile	Asp	Leu	Asp	
			20					25					30			
Glu	Val	Thr	Ile	Val	Ala	Phe	Lys	Gln	Asn	Thr	Pro	Asn	Arg	Glu	Pro	
			35				40					45				
Leu	Ser	Ile	Ser	Thr	Leu	Asp	Asn	Arg	Phe	Leu	Lys	Glu	Asn	Glu	Ile	
	50					55					60					
Ser	Gly	Ala	Lys	Asp	Leu	Ser	Ser	Leu	Leu	Pro	Asn	Phe	Tyr	Met	Pro	
65					70					75					80	
Asp	Tyr	Gly	Ser	Lys	Gln	Asn	Ser	Pro	Val	Tyr	Ile	Arg	Gly	Ile	Gly	
				85					90					95		
Ala	Lys	Lys	Asp	Ala	Pro	Ser	Val	Gly	Phe	Tyr	Val	Asp	Gly	Ile	Pro	
			100					105					110			
Tyr	Phe	Glu	Thr	Ser	Ala	Phe	Asp	Ile	Asp	Leu	Ser	Asp	Ile	Ser	Ser	
			115				120					125				
Ile	Glu	Val	Leu	Arg	Gly	Pro	Gln	Gly	Thr	Leu	Tyr	Gly	Arg	Asn	Ser	
	130					135					140					
Ile	Gly	Gly	Thr	Ile	Asn	Val	Tyr	Thr	His	Ser	Pro	Leu	Asp	Tyr	Gln	
145					150					155					160	

Gly Thr Tyr Phe Arg Leu Gly Tyr Gly Ser Tyr Asn Asp Met Arg Leu
 165 170 175
 Ile Ala Ser Asn Tyr Thr Lys Val Asn Glu Gln Leu Gly Leu Ser Phe
 180 185 190
 Ser Gly Asn Tyr His His Asn Asp Gly Phe Phe Thr Asn Leu His Thr
 195 200 205
 His Lys Lys Ala Asp Lys Leu Asp Asn Gly Ala Gly Arg Ile Gly Leu
 210 215 220
 Thr Trp Lys Pro Ala Ala His Trp Thr Thr Arg Phe Ile Thr Ser Tyr
 225 230 235 240
 Glu Tyr Ser Asn Gln Gly Gly Tyr Pro Tyr Gly Leu Tyr Asn Ala Asp
 245 250 255
 Lys Gly Thr Thr Glu Ala Val Asn Tyr Asn Asn Glu Gly Leu Tyr Arg
 260 265 270
 Arg Asn Leu Leu Thr Ser Gly Ile Asn Ile Arg Tyr Asn Gly Pro His
 275 280 285
 Ile Ser Phe Asn Ser Gln Thr Ser Tyr Gln Tyr Ile Gln Asp Lys Met
 290 295 300
 Gly Ile Asp Gln Asp Phe Ser Pro Arg Asn Ile Phe Tyr Gly Gln Asn
 305 310 315 320
 Lys Ile Arg Gln His Met Tyr Cys Gln Glu Phe Thr Ile Lys Ser Val
 325 330 335
 Asn Lys Ser Arg Tyr His Trp Ile Thr Gly Ala Phe Val Phe Arg Gln
 340 345 350
 Thr Ile Asn Arg Lys Val Asp Leu Ser Arg Phe Thr Asp Thr Thr Arg
 355 360 365
 His Leu Thr Asn Ser Gly Ile Pro Thr Gln Gly Ile Ala Phe Tyr His
 370 375 380
 Gln Ser Thr Leu Asp Leu Leu Gln Gly Leu Ser Cys Ser Val Gly Leu
 385 390 395 400
 Arg Tyr Asp Tyr Glu His Ala Arg Cys Asp Phe Ser Lys Val Gln Gln
 405 410 415
 Pro Leu Asn Gly Asn Gly Glu Thr Lys Ser Leu Glu Gln Phe Asn Arg
 420 425 430
 Ser Leu His Phe Gly Gln Phe Thr Pro Arg Phe Ser Met Gln Tyr Leu
 435 440 445
 Ser Ser His Asn Gln Leu Phe Tyr Ala Ser Val Ser Lys Gly Tyr Lys
 450 455 460
 Ala Gly Gly Phe Asn Val Ser Phe Leu Asn Asn Asp Asp Tyr Leu Tyr
 465 470 475 480
 Ser Pro Glu Tyr Asn Trp Asn Tyr Glu Ile Gly Thr Lys Leu Ser Phe
 485 490 495
 Leu Asn Asn Arg Leu Ser Ala Asp Leu Ser Leu Phe Tyr Ile Asp Trp
 500 505 510
 Arg Asn Gln Gln Ile Thr Asn Thr Ile Pro Thr Val Gly Asn Val Ile
 515 520 525
 Arg Asn Ala Gly Arg Ser Arg Asn Lys Gly Ile Glu Ala Ser Phe Gln
 530 535 540
 Ala Arg Pro Thr Lys Ser Trp Met Met Tyr Met Asn Tyr Gly Tyr Thr
 545 550 555 560
 Asp Ala Arg Phe Val His Tyr Gln Lys Glu Glu Arg Gly Ile Leu Lys
 565 570 575
 Asp Tyr Glu Gly Asn Tyr Leu Pro Met Val Pro Arg His Thr Phe Ser
 580 585 590
 Leu Thr Thr Gly Tyr Ser Phe Tyr Asp Ile Cys Ser Trp Ile Asp Arg
 595 600 605
 Leu Thr Leu Asn Ala Gly Val Ser Val Thr Gly Pro Ile Tyr Trp Tyr
 610 615 620
 Glu Asp Asn His Pro Ser Gln Ser Pro Tyr Ala Leu Val Asn Leu Arg

625 630 635 640
 Ile Ser Ile Asn Lys Gly Cys Phe Thr Trp Glu Ala Trp Ser Lys Asn
 645 650 655
 Leu Thr Asn Thr Asp Tyr Leu Ser Tyr Tyr Phe Val Thr Ser Lys Ala
 660 665 670
 Tyr Ala Gln Lys Gly Lys Pro Ile Thr Leu Gly Thr Ser Val Ser Ile
 675 680 685
 Ser Leu
 690

<210> 6648
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 6648
 Tyr Pro Thr Asn Thr Tyr Ile Tyr Ile Lys Lys Asn Thr Ile Tyr Met
 1 5 10 15
 Tyr Gln Thr Ile Ser Glu Tyr Glu Ser Leu Gln Pro Val Thr Tyr Gln
 20 25 30
 Ile Asp Thr Asn Arg Phe Glu Lys Asn Gln Ile Lys Asp Ser Ala Lys
 35 40 45
 Glu Gln Tyr Lys Ser Val Thr Asn Leu Tyr Leu Pro Arg Asn Asp Lys
 50 55 60
 Asn Cys Ile Cys Thr Ser Val Pro Asn Val Asn Thr Gln Glu Ala Lys
 65 70 75 80
 Pro Gly Arg

<210> 6649
 <211> 231
 <212> PRT
 <213> B.fragilis

<400> 6649
 Leu Tyr Lys Lys Ser Leu Ile Met Lys Lys Ile Lys Phe Met Ala Leu
 1 5 10 15
 Phe Leu Ser Met Ala Leu Val Phe Gly Ser Cys Gly Ser Met Asn Asn
 20 25 30
 Thr Ala Lys Gly Gly Val Ile Gly Gly Ser Gly Ala Ala Leu Gly
 35 40 45
 Ala Ile Ile Gly Gly Ile Ala Gly Lys Gly Lys Gly Ala Ala Ile Gly
 50 55 60
 Ala Ala Val Gly Thr Ala Val Gly Ala Gly Ala Gly Val Leu Ile Gly
 65 70 75 80
 Arg Lys Met Asp Lys Lys Ala Ala Glu Ala Ala Lys Ile Lys Asp Ala
 85 90 95
 Gln Val Glu Gln Val Thr Asp Asn Asn Gly Leu Ala Ala Val Lys Val
 100 105 110
 Thr Phe Pro Ser Gly Ile Leu Phe Ala Phe Asn Ser Ser Ala Leu Ser
 115 120 125
 Ala Ala Ser Lys Gln Ser Leu Ala Glu Phe Ala Asn Ile Leu Lys Glu
 130 135 140
 Asp Pro Thr Val Asp Val Ala Ile Ile Gly His Thr Asp Lys Val Gly
 145 150 155 160
 Ser Tyr Glu Ala Asn Gln Lys Val Ser Ala Asn Arg Ala Tyr Ala Val
 165 170 175
 Glu Asn Tyr Leu Gln Ala Cys Gly Val Lys Pro Tyr Gln Phe Lys Lys
 180 185 190

Val	Glu	Gly	Val	Gly	Tyr	Ser	Gln	Tyr	Asn	Glu	Ser	Glu	Thr	Pro	Glu
		195					200					205			
Gln	Asn	Arg	Arg	Val	Glu	Ile	Phe	Met	Tyr	Ala	Ser	Glu	Gln	Met	Ile
		210				215					220				
Lys	Asn	Ala	Glu	Ala	Gly	Lys									
225						230									

<210> 6650

<211> 424

<212> PRT

<213> B.fragilis

<400> 6650

Thr	Leu	Lys	Lys	Met	Lys	Thr	Gln	Trp	Ile	Arg	Ser	Ile	Gly	Cys	Ile
1				5					10					15	
Leu	Ala	Val	Leu	Ile	Leu	Ser	Gly	Ile	Met	Pro	Leu	Ala	Ala	Gln	Asp
			20					25					30		
Asn	Ala	Glu	Arg	Tyr	Thr	Thr	Ile	Ser	Gly	Val	Val	Lys	Asp	Lys	Leu
			35				40					45			
Asn	Lys	Lys	Lys	Leu	Glu	Tyr	Val	Asn	Val	Ser	Ile	Pro	Gly	Ser	Ser
			50			55				60					
Val	Gly	Thr	Val	Thr	Asn	Ala	Asp	Gly	Glu	Phe	Thr	Leu	Lys	Ile	Pro
65					70					75					80
Glu	Ser	Val	Gln	Ala	Lys	Asp	Ile	Glu	Ala	Ser	His	Val	Gly	Tyr	Leu
			85						90					95	
Asn	Ser	Arg	Ile	Pro	Leu	Lys	Glu	Glu	Asn	Pro	Thr	Glu	Arg	Ile	Val
			100					105					110		
Trp	Leu	Thr	Pro	Tyr	Ala	Asn	Leu	Leu	Ser	Glu	Ile	Leu	Val	Arg	Ala
			115				120					125			
Arg	Asp	Pro	Arg	Ser	Ile	Val	Glu	Glu	Ala	Leu	Arg	Lys	Ile	Pro	Ala
			130			135					140				
Asn	Tyr	Ser	Pro	Gln	Ser	Asn	Met	Leu	Thr	Gly	Phe	Tyr	Arg	Glu	Leu
145					150					155					160
Ala	Gln	Lys	Gly	Arg	Arg	Tyr	Ile	Asn	Ile	Ser	Glu	Ala	Val	Ile	Asp
			165						170					175	
Ile	Tyr	Lys	Thr	Pro	Tyr	Asn	Glu	Thr	Ala	Glu	His	Asp	Arg	Val	Gln
			180					185					190		
Ile	Tyr	Arg	Gly	Arg	Arg	Leu	Leu	Ser	Gln	Lys	Gln	Ser	Asp	Thr	Leu
		195				200						205			
Ala	Val	Lys	Leu	Leu	Gly	Gly	Pro	Asn	Met	Ala	Ile	Tyr	Met	Asp	Ile
			210			215					220				
Val	Lys	Asn	Pro	Asp	Cys	Leu	Leu	Ala	Gln	Glu	Asp	Leu	Leu	Phe	Tyr
225					230					235					240
Glu	Phe	Arg	Met	Glu	Asp	Pro	Thr	Ser	Ile	Asp	Asp	Arg	Ser	Gln	Tyr
			245						250					255	
Val	Ile	Ser	Phe	Arg	Pro	Arg	Val	Lys	Leu	Ser	Tyr	Pro	Leu	Cys	Tyr
			260					265					270		
Gly	Thr	Leu	Tyr	Ile	Asp	Lys	Glu	Arg	Leu	Ser	Phe	Thr	Arg	Ala	Glu
			275				280					285			
Phe	Asn	Leu	Ser	Met	Asp	Asp	Lys	Asn	Lys	Ala	Thr	Gln	Ala	Ile	Leu
			290			295					300				
Arg	Lys	Lys	Pro	Phe	Gly	Leu	Arg	Phe	Lys	Pro	Val	Glu	Val	Ser	Tyr
305					310					315					320
Leu	Ile	Ser	Tyr	Lys	Asn	Leu	Glu	Gly	Ile	Thr	Tyr	Leu	Ser	Tyr	Ile
			325						330					335	
Arg	Asn	Asn	Ile	Arg	Phe	Lys	Cys	Asp	Trp	Lys	Arg	Lys	Leu	Phe	Ser
			340					345					350		
Thr	Asn	Tyr	Thr	Ile	Leu	Ser	Glu	Met	Val	Val	Thr	Asp	Arg	Lys	Glu
			355				360					365			

Asn Asn Ile Thr Ala Ile Pro Tyr Lys Ala Ala Phe Lys Gln Asn His
 370 375 380
 Val Phe Ser Asp Lys Val Asp Asn Phe Thr Ser Asp Asn Phe Trp Gly
 385 390 395 400
 Gly Tyr Asn Ile Ile Glu Pro Thr Glu Ser Leu Glu His Ala Val Asn
 405 410 415
 Lys Leu Lys Lys Gln Gln Lys Gln
 420

<210> 6651
 <211> 316
 <212> PRT
 <213> B.fragilis

<400> 6651

Gln Val Met Asn Glu Thr Ile Arg Arg Ile Leu Ala Glu Ser Gly Thr
 1 5 10 15
 Lys Thr Ser Lys Ile Arg Lys Leu Leu Leu Thr Gly Leu Ser His Arg
 20 25 30
 Glu Ile Ala Asp Leu Val Thr Arg Gly Asn Arg Gly Phe Val Trp Asn
 35 40 45
 Val Tyr Lys Arg Met Arg Asp Glu Gly Leu Leu Pro Ala Ser Gln Thr
 50 55 60
 Ala Thr Val Leu Arg Pro Glu Pro Asp Tyr Thr Phe Asn Arg Cys Phe
 65 70 75 80
 Gly Val Glu Ile Glu Ala Tyr Asn Cys Pro Arg Gln Thr Leu Thr Asp
 85 90 95
 Ala Leu Arg Glu Thr Gly Ile Pro Val Glu Ile Gly Ser Arg Asn Ala
 100 105 110
 Glu Thr Asn Ser Asn Trp Lys Leu Thr Thr Asp Gly Ser Leu Glu Gly
 115 120 125
 Ser His Thr Phe Glu Leu Val Ser Pro Ile Leu Cys Gly Glu Gln Gly
 130 135 140
 Leu Glu Val Leu Glu Arg Val Cys Trp Val Leu Asp Ala Tyr Asn Val
 145 150 155 160
 Lys Ile Asn Ser Ser Cys Gly Val His Val His Phe Asn Ala Gly Asp
 165 170 175
 Phe Asn Leu Thr Thr Trp Gln Asn Leu Ile Leu Ser Tyr Lys His Ala
 180 185 190
 Glu Thr Glu Ile Asp Lys Phe Met Pro Ala Ser Arg Arg Gly Asn Arg
 195 200 205
 Asn Thr Tyr Cys Arg Ser Leu Arg Ala Phe Ser Asp Glu Asp Ile Arg
 210 215 220
 Ser Ala Glu Ser Ile Glu Ser Leu Gln Arg Leu Phe Gly Ser Arg Tyr
 225 230 235 240
 Met Lys Val Asn Leu Glu Ala Tyr Ser Arg His Arg Thr Val Glu Phe
 245 250 255
 Arg Gln His Ser Gly Thr Ile Asn Phe Thr Lys Ile Glu Asn Trp Val
 260 265 270
 Arg Phe Leu Gly Arg Leu Ile Ile Phe Ala Ser Thr Ser Ser Leu Pro
 275 280 285
 Ala Gly Ile Arg Leu Glu Asp Phe Pro Phe Leu Glu Glu Lys Gln Lys
 290 295 300
 Leu Tyr Tyr Lys Leu Arg Thr Lys Lys Leu Met Glu
 305 310 315

<210> 6652
 <211> 401
 <212> PRT

<213> B.fragilis

<400> 6652

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Asn Asn Met Asn Phe Asn Glu Ile Lys Asn Arg Leu Leu Ile Gly Ala
1      5      10      15
Leu Ala Ile Thr Val Phe Pro Phe Tyr Val His Ala Gln Asn Asp Lys
      20      25      30
Met Glu Gly Gln Thr Ala His Arg Thr Lys Ala Trp Glu Ile Gly Val
      35      40      45
Gly Gly Ala Leu Ile Asn Trp Asp Arg Val Thr Phe Ser Asn Phe Arg
      50      55      60
Gln Val Asp Gly Asn Tyr Leu Tyr Arg Met Asn Ile Asp His Leu Phe
65      70      75      80
Gly Gly Ile Gln Leu Tyr Ala Ala Arg Glu Leu Asn Pro Trp Phe Tyr
      85      90      95
Leu Asp Leu Gln Gly Thr Leu Gly Leu Ala Arg Lys Gln Val Glu Thr
      100     105     110
Gly Gly Arg Lys Phe Asp Phe Met Tyr Met Ala Gly Pro Gly Leu Gln
      115     120     125
Phe Arg Leu Thr Pro Leu Phe Lys Ser Lys Tyr Val Glu Pro Tyr Leu
      130     135     140
Arg Val Gly Val Asn Tyr Leu His His Asp Phe Tyr Ala Ile Asn Ala
145     150     155     160
Gly Lys Phe Glu Asn Asp Pro Ile Gly Glu Ala Glu Trp Thr Ser Ser
      165     170     175
Asn Pro Trp Asn Lys Glu Lys Ile Gly Ser Lys Gln Ser Tyr Phe Pro
      180     185     190
Leu Ser Phe Gly Ala Gly Val Gln Ala Trp Leu Asn Asp His Trp Gly
      195     200     205
Val Gly Leu Gln Gly Glu Tyr Ile Met Pro Val Asp Lys Lys Gln Thr
210     215     220
Arg Phe Val Gln Ala Ser Met Arg Ile Met Phe Arg Leu Gly Gly Ser
225     230     235     240
Thr Lys Arg Pro Met Pro Val Val Gln Tyr Ile Asp Arg Pro Val Asp
      245     250     255
Arg Ile Val Glu Arg Ile Val Glu Lys Arg Ile Glu Val Pro Ala Val
      260     265     270
Val Glu Ser His Val Cys Asp Leu Phe Asp Asn Ile His Phe Ala Phe
275     280     285
Asp Lys Asp Val Ile Thr Ser Glu Ser Glu Ile Thr Leu Asp Lys Ile
290     295     300
Ala Asp Leu Leu Lys Ser Tyr Pro Asp Asn Asn Phe Leu Ile Thr Gly
305     310     315     320
Tyr Thr Asp Ala Arg Gly Ser Asp Asn Tyr Asn Ile Asp Leu Ser Lys
      325     330     335
Arg Arg Ala Lys Ala Val Tyr Ser Ala Leu Leu Lys Arg Gln Val Pro
      340     345     350
Gln His Met Leu Lys Trp Arg Gly Val Gly Tyr His Ala Ser Ser Val
      355     360     365
Pro Ala Ser Gly Pro Asp Lys Val Arg Met Gly Asp Arg Lys Val Ser
370     375     380
Ile Glu Arg Val Thr Asn Ser Asp Tyr Trp Gly Trp Leu Thr Asn Glu
385     390     395     400
Glu

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<210> 6653

<211> 301

<212> PRT

<213> B.fragilis

<400> 6653

Lys Asn Met Lys Thr Thr Gln Arg Thr Ala Gly Trp Tyr His Val Met
 1 5 10 15
 Ala Ala Val Thr Val Met Ile Trp Gly Thr Thr Phe Val Ala Thr Lys
 20 25 30
 Val Leu Ile Lys Tyr Gly Leu Ser Pro Val Asp Ile Leu Phe Tyr Arg
 35 40 45
 Phe Leu Leu Ala Tyr Ile Cys Ile Trp Phe Phe Ser Pro Arg Val Leu
 50 55 60
 Leu Ala Lys Ser Trp Gln Asp Glu Leu Arg Phe Val Gly Leu Gly Leu
 65 70 75 80
 Cys Gly Gly Ser Leu Tyr Phe Val Ala Glu Asn Thr Ala Leu Gly Met
 85 90 95
 Thr Leu Ala Ser Asn Val Ser Leu Ile Ile Cys Thr Thr Pro Ile Leu
 100 105 110
 Thr Ala Leu Leu Ala Pro Phe Phe Tyr Lys Gly Asp Lys Leu Lys Ala
 115 120 125
 Arg Leu Ile Gly Gly Ser Leu Met Ala Leu Ile Gly Val Gly Leu Val
 130 135 140
 Val Phe Asn Gly Ser Phe Ile Leu Gln Leu Ser Pro Ala Gly Asp Ile
 145 150 155 160
 Leu Thr Leu Ile Ala Ala Leu Met Trp Ala Phe Tyr Cys Leu Leu Leu
 165 170 175
 Arg Arg Met Asn Thr His Tyr Pro Thr Leu Phe Ile Thr Arg Lys Val
 180 185 190
 Phe Phe Tyr Gly Leu Val Thr Leu Leu Pro Leu Phe Leu Val Tyr Pro
 195 200 205
 Leu Gln Thr Asp Ile His Ile Leu Phe Arg Pro Val Val Ala Leu Asn
 210 215 220
 Leu Leu Phe Leu Gly Val Ile Ala Ser Met Leu Cys Tyr Ile Met Trp
 225 230 235 240
 Asn Thr Ala Val Lys Gln Leu Gly Val Val Cys Ala Thr Ser Tyr Ile
 245 250 255
 Tyr Val Val Pro Leu Ile Thr Leu Leu Thr Ser Ala Ile Val Ile Asp
 260 265 270
 Glu Thr Ile Thr Ile Val Ala Leu Leu Gly Ser Ala Leu Ile Leu Ser
 275 280 285
 Gly Val Tyr Ile Ala Glu Arg Gly Val Asn Leu Lys Lys
 290 295 300

<210> 6654

<211> 77

<212> PRT

<213> B.fragilis

<400> 6654

Leu Thr Met Asn Lys Val Val Tyr Val His Leu Val Phe Glu Lys Lys
 1 5 10 15
 Asp Tyr Phe Phe Gly Ser Ile Ala Ala Ile Tyr Asp Tyr Leu Ser Ala
 20 25 30
 Asp Gln Ile Gly Ala Gly Tyr Asn Thr Leu Arg Asn Val Arg Trp Lys
 35 40 45
 Glu Thr Ser Val Tyr Val Thr Pro Lys Ala Ile Ile Lys Ile Gly Lys
 50 55 60
 Leu Leu Arg Ala Gly Ser Cys Lys Lys Gln Pro Ile Lys
 65 70 75

<210> 6655
 <211> 186
 <212> PRT
 <213> B.fragilis

<400> 6655

Ser Val Thr Lys Met Asn Thr Asn Lys Glu Phe Leu Thr Lys Met Ile
 1 5 10 15
 Arg Val Ser Pro Ser Val Lys Lys Arg Met Glu Ile Phe Gln Gly Gly
 20 25 30
 Asp Ser Ala Asn Ser Cys Ile Asp Arg Met Ile Thr Phe Phe Glu Ile
 35 40 45
 Thr Gly Phe Asn Pro Arg Tyr Ala Ser Arg Asn Pro Thr Ala Leu Val
 50 55 60
 Glu Lys Arg Ile Glu Asp Val Val Arg Ile Ile Lys Ser Gln Glu Arg
 65 70 75 80
 Asp Ile Leu Lys Pro Val Leu Glu Lys Leu Ser Ala Ile Asn Asn Thr
 85 90 95
 Pro Gln Glu Ser Pro Asp Tyr Ala Arg Leu Met Asn Glu Leu Arg Asp
 100 105 110
 Leu Lys Asp Glu Asn Arg Lys Leu Lys Glu Arg Leu Gln Ala Asp Asp
 115 120 125
 Leu His Thr Gln Asp Ala Ala Val Tyr Gln Asp Lys Leu Lys Arg Leu
 130 135 140
 Gly Gly Leu Leu Lys Tyr Gln Leu Asp Pro Glu Lys Phe Pro Arg Ile
 145 150 155 160
 Lys Tyr Ser Asp Asp Val Arg Val Pro Val Asn Thr Leu Gln Leu Leu
 165 170 175
 Ile Lys Lys Ile Asn Glu Glu Tyr Val Leu
 180 185

<210> 6656
 <211> 152
 <212> PRT
 <213> B.fragilis

<400> 6656

Arg Lys Thr Lys Pro Gly Lys Lys Lys Arg Gly Ala Ser Thr Ile Ser
 1 5 10 15
 Gln Gln Thr Ala Lys Asn Val Phe Leu Trp Pro Gln Ser Ser Trp Ile
 20 25 30
 Arg Lys Gly Phe Glu Val Tyr Phe Thr Phe Leu Ile Glu Thr Cys Trp
 35 40 45
 Ser Lys Glu Arg Ile Met Glu Val Tyr Leu Asn Ser Ile Glu Met Gly
 50 55 60
 Lys Gly Ile Tyr Gly Ala Gln Ala Thr Ala Lys Tyr Lys Phe Lys Thr
 65 70 75 80
 Thr Ala Ala Lys Leu Thr Arg Gly Gln Cys Ala Leu Ile Ala Ala Thr
 85 90 95
 Leu Pro Asn Pro Ile Arg Phe Asp Ser Ala His Pro Ser Pro Tyr Ile
 100 105 110
 Lys Arg Arg Gln Gly Gln Ile Leu Arg Leu Met Asn Leu Val Pro Lys
 115 120 125
 Phe Pro Pro Val Asp Lys Glu Lys Ala Lys Gly Gln Asp Thr Lys Lys
 130 135 140
 Gln Lys Asn Lys Lys Lys Lys Lys
 145 150

<210> 6657

<211> 204
 <212> PRT
 <213> B.fragilis

<400> 6657

Leu Ile Lys Asn Thr Ile Asp Ser Pro Asn Asn Asp Arg Ser Ile Met
 1 5 10 15
 Tyr Lys Ile Ile Phe Val Phe Leu Ala Ile Met Gly Ile Ala Thr Ala
 20 25 30
 Ser Cys Ala Gln Gln Lys Gln Gly Ala Asn Arg Lys Gln Pro Asn Asn
 35 40 45
 Lys Val Leu Ile Ala Tyr Phe Ser Ala Thr Gly Thr Thr Ala Gly Ala
 50 55 60
 Ala Glu Lys Leu Ser Lys Val Thr Gly Gly Glu Leu Tyr Glu Ile Thr
 65 70 75 80
 Pro Ala Gln Pro Tyr Thr Asn Ala Asp Leu Asn Trp Asn Asn Lys Gln
 85 90 95
 Ser Arg Ser Ser Leu Glu Met Asn Asp Pro Lys Ser Arg Pro Ala Ile
 100 105 110
 Arg Lys Ser Ser Ile Asp Ile Ala Asp Tyr Asp Val Ile Phe Val Gly
 115 120 125
 Tyr Pro Ile Trp Trp Asn Leu Ala Pro Arg Ile Ile Asn Thr Phe Ile
 130 135 140
 Glu Ser Tyr His Leu Lys Asn Lys Thr Ile Ile Leu Phe Ala Thr Ser
 145 150 155 160
 Gly Ser Ser Ser Ile Thr Asn Ser Met Ala Thr Leu Lys Lys Ser Tyr
 165 170 175
 Pro Glu Leu Ile Trp Lys Glu Gly Lys Leu Leu Asn Gly Met Asn Glu
 180 185 190
 Asn Asp Ile Arg Glu Trp Ile Ser Lys Leu Asp Tyr
 195 200

<210> 6658
 <211> 92
 <212> PRT
 <213> B.fragilis

<400> 6658

Leu Ser Trp Asn Asn Ser Asn Ser Ala Trp Pro Leu Leu Tyr Lys Lys
 1 5 10 15
 Glu His Gln Arg Pro Ile Thr Ala Lys Tyr Thr Gly Leu His Cys Ile
 20 25 30
 Lys Ser Lys Gln Pro Thr Ile Tyr Lys Asn Glu Leu Tyr Lys Ser Val
 35 40 45
 Gln Ser Ile Val Lys Lys Ser Phe Glu Thr Leu Ser Phe Ile Leu Cys
 50 55 60
 Glu Ile Cys Ser Asp Lys His Glu Ile Ile Leu Asn His Leu Tyr Ala
 65 70 75 80
 Leu Tyr Ile Leu Ser Leu Pro Ile Val Ile Phe Met
 85 90

<210> 6659
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 6659

Ile Pro Asn Leu Leu Gly Val Gly Met Gly Phe Ile Gln Val Tyr Asn
 1 5 10 15

Gly Asn Leu Lys Tyr Val Ala Thr Lys Asp Arg Lys Glu Val Asn Met
 20 25 30
 Ala Gly Lys Asn Ile His Val Val His Asn Gly Asp Gln Trp Lys Val
 35 40 45
 Lys Gln Glu Asn Ala Gln Arg Ser Ser Gly Asn Phe Arg Thr Gln Gln
 50 55 60
 Glu Ala Phe Glu Arg Ala Arg Glu Ile Ala Ile Lys Asn Gly Gln Glu
 65 70 75 80
 Val Ala Ile His Gly Leu Asp Gly Arg Ile Arg Glu Lys His Ser Tyr
 85 90 95
 Gly Asn Asp Pro Tyr Pro Pro Glu Gly
 100 105

<210> 6660

<211> 206

<212> PRT

<213> B.fragilis

<400> 6660

Ile Glu Thr Glu Ser His Thr Phe Gly Ser Ser Leu Ile Thr Leu Arg
 1 5 10 15
 Ile Lys Arg Ile Met Asn Leu Leu Ile Ile Leu Gly Ile Ile Ile
 20 25 30
 Leu Val Ile Ile Ala Ser Met Tyr Asn Ser Leu Val Lys Leu Arg
 35 40 45
 Asn Asn Arg Glu Asn Ala Phe Ala Asp Ile Asp Val Gln Leu Lys Gln
 50 55 60
 Arg His Asp Leu Ile Pro Gln Leu Val Asp Thr Val Lys Gly Tyr Ala
 65 70 75 80
 Ala His Glu Lys Glu Thr Leu Glu Arg Val Ile Gln Ala Arg Asn Gly
 85 90 95
 Ala Val Ser Ala Arg Thr Ile Asp Glu Lys Ile Thr Ala Glu Asn Gln
 100 105 110
 Leu Ser Ser Ala Leu Ala Gly Leu Lys Ile Thr Leu Glu Ala Tyr Pro
 115 120 125
 Asp Leu Lys Ala Asn Gln Asn Phe Leu Gln Leu Gln Glu Glu Ile Ser
 130 135 140
 Asp Val Glu Asn Lys Leu Ala Ala Val Arg Arg Tyr Phe Asn Ser Ala
 145 150 155 160
 Thr Lys Glu Leu Asn Asn Ala Val Gln Thr Phe Pro Ser Asn Leu Ile
 165 170 175
 Ala Asn Met Phe Gly Phe His Lys Glu Met Met Phe Asp Leu Gly Thr
 180 185 190
 Glu Gln Arg Ala Asn Leu Glu Glu Ala Pro Lys Ile Lys Phe
 195 200 205

<210> 6661

<211> 436

<212> PRT

<213> B.fragilis

<400> 6661

Val Arg Ala Glu Ser Gly Ser Thr Leu Glu Glu Arg Lys Asn Gln Val
 1 5 10 15
 Val Arg Phe Arg Arg Asp Arg Pro Gly Gly Gly Ala Thr Ala Gly Arg
 20 25 30
 Cys His Arg Gly Glu Gly His Arg Asp Phe Arg Arg Arg Gly Tyr Gly
 35 40 45
 Arg Arg Leu Arg Leu Arg Arg Gly Cys Gly Arg Leu Gly Arg Leu Arg

50	55	60
Gly His Arg Thr Ser Ser	Leu Ile Cys Ile Glu Ser Tyr Gln Asn Ile	
65	70	75
Phe Ile His Asn Leu Ile	Phe Asn Gln Met Lys Lys Ile Phe Leu Ile	80
	85	90
Gly Leu Ala Ala Thr Ala Met Leu Ala	Ser Cys Ser Asn Asp Glu Thr	95
	100	105
Val Glu Met Ala Gln Ser Lys Ala Ile	Gly Phe Ser Asn Ala Phe Val	
	115	120
Asn Asn Gly Thr Arg Ser Ile Val Asp Pro Ser	Phe Thr Ser Thr Ser	
	130	135
Leu Glu Asp Phe Ala Val Tyr Gly Phe Thr Arg	Ala Gly Gln Ile Phe	
	145	150
Lys Gly Asp Lys Val Tyr Lys Glu Ser Leu Glu	Ser Thr Pro Gln Trp	
	165	170
Ser Tyr Asp Val Leu Gln Tyr Trp Val Pro Asp	Asn Thr Tyr Thr Phe	
	180	185
Gly Ala Ile Ala Pro Tyr Ser Val Ala Thr Asn	Val Phe Asp Val Ala	
	195	200
Leu Pro Glu Asn Ala Thr Lys Val Glu Met Lys	Val Ala Phe Thr Asn	
	210	215
Thr Asp Ala Asp Gln Val Asp Leu Leu His Ala	Ala Pro Thr Gln Ile	
	225	230
Ala Gly Thr Glu Val Thr Glu Thr Tyr Ala Thr	Pro Val Ser Met Thr	
	245	250
Phe Asp His Gln Leu Ser Lys Val Lys Phe Ser	Phe Glu Asn Ala Val	
	260	265
Gly Glu Gly Tyr Asn Val Lys Val Ser Asn Val	Arg Ile Thr Asp Ala	
	275	280
Tyr Thr Lys Gly Thr Leu Thr Val Thr Ala Ala	Gly Asn Ile Trp Ser	
	290	295
Ala Gln Ala Asp Asn Asn Leu Ile Leu Asn Phe	Gly Asn Val Val Ala	
	305	310
Asn Asp Ala Thr Ala Asp Glu Ala Ala Val Ile	Ala Asn Ala Thr Thr	
	325	330
Ser Glu Ser Tyr Asn Glu Lys Leu Met Ile Pro	Met Ala Ala Thr Ala	
	340	345
Thr Tyr Thr Val Thr Phe Thr Ala Glu Leu Tyr	His Gly Asp Val Leu	
	355	360
Leu Gly Ser Tyr Asn His Glu Val Thr Ile Lys	Asn Val Glu Phe Lys	
	370	375
Leu Gly Tyr Cys Tyr Asp Phe Lys Ala Thr Leu	Thr Ser Ser Asn Ile	
	385	390
Thr Asp Lys Pro Leu Asn Pro Ile Lys Phe Glu	Val Asp Asn Ile Thr	
	405	410
Asp Trp Asn Lys Thr Asp Ile Asp Lys Asp Leu	Ala Val Pro Thr Thr	
	420	425
Gln Ser Gly Asn		430
	435	

<210> 6662

<211> 73

<212> PRT

<213> B.fragilis

<400> 6662

Gly Gln Gln Asp Asn Phe Phe Leu Tyr Thr Phe Val Tyr Ala Lys Tyr
1 5 10 15
Lys Met Tyr Thr Tyr Asn Arg Leu Ile Ile Asn Ala Met Arg Arg Phe

	20		25		30										
Met	Phe	Pro	Cys	Ala	Gly	Thr	Pro	Leu	Ala	Leu	Pro	Tyr	Gln	Glu	Phe
	35						40					45			
Thr	Lys	Gly	Pro	Pro	Ala	Leu	Ser	Pro	Gly	Arg	Phe	Arg	Glu	Ala	Arg
	50					55					60				
Asn	Ile	Arg	Gln	Gly	His	Gly	Cys	Trp							
65					70										

<210> 6663

<211> 887

<212> PRT

<213> B.fragilis

<400> 6663

Asn	Asn	Ile	Leu	Met	Arg	Pro	Ser	His	Phe	Thr	Leu	His	Ser	Cys	Arg
1			5						10					15	
Asp	Ala	Phe	Ser	His	Phe	Leu	Leu	Phe	Thr	Leu	Val	Ser	Gly	Ser	Ile
			20					25					30		
Cys	Leu	Ser	Ser	Cys	Glu	Asp	Asp	Met	Asp	Arg	Pro	Ser	Pro	Ser	Ser
	35						40					45			
His	Val	Ser	Phe	Thr	Thr	Glu	Ile	Ser	Ser	Ser	Arg	Thr	Pro	Ser	Thr
	50					55					60				
Arg	Ser	Thr	Thr	Asp	Thr	Asp	Thr	Pro	Gln	Gly	Thr	Val	Thr	Ala	Leu
65				70					75					80	
Gln	Gly	Gly	Ser	Thr	Pro	Leu	Tyr	Leu	His	Thr	Leu	Tyr	Thr	Asp	Ser
			85					90					95		
Ile	Ala	Leu	Pro	Pro	Ser	Asp	Ser	Arg	Pro	Asp	Arg	Gly	Val	Leu	Thr
			100					105					110		
Arg	Ala	Thr	Pro	Ile	Lys	Asp	Ala	Asn	Met	Tyr	Glu	Ser	Phe	Gly	Val
	115						120					125			
Ser	Ala	Tyr	Ser	Tyr	Thr	Gly	Ser	Trp	Ser	Glu	Asp	Lys	Thr	Pro	Asn
	130					135					140				
Tyr	Phe	Tyr	Asn	Ala	Thr	Ala	Ser	Lys	Ser	Asp	Gly	Gly	Tyr	Thr	Leu
145					150					155					160
Ser	Ser	Thr	Tyr	Tyr	Trp	Pro	Gly	Ser	Ser	Tyr	Lys	Met	Lys	Phe	Phe
			165					170						175	
Ala	Tyr	Ala	Pro	Thr	Ala	Asn	Thr	Gln	Tyr	Val	Leu	Ser	Gly	Arg	Thr
			180					185					190		
His	Ala	Gly	Ser	Pro	Thr	Ile	Ser	Val	Thr	Ile	Pro	Gly	Asp	Val	Asn
	195						200					205			
Asp	Gln	Lys	Asp	Leu	Leu	Val	Ala	Lys	Thr	Asp	Glu	Leu	Ala	Gly	Asn
	210					215				220					
Thr	Asn	Thr	Ala	Val	Ala	Leu	Ser	Phe	Asn	His	Ala	Leu	Thr	Ala	Ile
225					230					235					240
Arg	Phe	Val	Cys	Gly	Asp	Asp	Met	Gln	Val	Gly	Thr	Val	Lys	Ser	Val
			245						250					255	
Ser	Leu	Lys	Asn	Val	Tyr	Ser	Lys	Gly	Thr	Tyr	His	Met	Gly	Thr	Gln
			260					265					270		
Ser	Trp	Ser	Asn	Val	Gly	Thr	Pro	Ala	Thr	Phe	Pro	Gln	Thr	Leu	Asn
	275						280					285			
Lys	Ser	Ile	Thr	Gly	Thr	Pro	Asp	Glu	Pro	Leu	Thr	Val	Asp	Ala	Gln
	290					295					300				
Thr	Phe	Met	Met	Val	Pro	Gln	Thr	Leu	Pro	Asp	Gly	Ala	Gln	Leu	Glu
305					310					315					320
Val	Val	Phe	Thr	Asp	Asn	Ser	Ser	Met	Asp	His	Thr	Leu	Thr	Ala	Asp
			325						330					335	
Leu	Lys	Gly	Thr	Val	Trp	Pro	Val	Gly	Lys	Thr	Val	Thr	Tyr	Lys	Ile
			340					345					350		
Ser	Ser	Ser	Ser	Ile	Asn	Trp	Thr	Tyr	Thr	Leu	Ala	Val	Thr	Ser	Pro

Ala	Asp	Phe	Thr	Tyr	Glu	Gly	Gly	Thr	Gln	Gln	Tyr	Asn	Val	Thr	Ser
370						375					380				
Tyr	Arg	Gln	Asn	Thr	Lys	Gly	Val	Lys	Glu	Ala	Val	Ala	Trp	Thr	Ala
385					390					395					400
Gln	Tyr	Ser	Glu	Asp	Gly	Gly	Ala	Ser	Trp	Ser	Asn	Thr	Arg	Pro	Gly
				405					410					415	
Trp	Leu	Asp	Ala	Phe	Thr	Val	Ser	Gly	Asn	Gly	Gly	Asp	Thr	Pro	Gln
			420					425					430		
Ser	Tyr	Asn	Ala	Thr	Val	Ile	Ala	Gln	Thr	Gly	Val	Glu	Ala	Asn	Pro
		435					440					445			
Gln	His	Thr	Ala	Ala	Leu	Gln	Asn	Ala	Ser	Val	Lys	Gly	Thr	Glu	Thr
450						455					460				
Val	Pro	Tyr	Asn	Leu	Ala	Asn	Gln	Thr	Asn	Gly	Gly	Thr	Val	Asp	Glu
465					470					475					480
Asn	Thr	Ala	Asn	Cys	Tyr	Val	Val	Ser	Gly	Ser	Gly	Tyr	Tyr	Cys	Phe
				485					490					495	
Pro	Leu	Val	Tyr	Gly	Asn	Ala	Ile	Lys	Gly	Gly	Thr	Thr	Asn	Thr	Ser
			500					505					510		
Ala	Tyr	Thr	Ser	Thr	Ala	Pro	Ser	Gly	Thr	Thr	Ile	Leu	Ser	Pro	Phe
		515					520					525			
Ile	Asn	His	Ala	Gly	Asn	Ala	Ile	Thr	Ala	Pro	Tyr	Ile	Arg	Asn	Asn
530						535						540			
Ala	Asp	Cys	Thr	Pro	Ala	Lys	Ala	Glu	Leu	Val	Trp	Gln	Asp	Ala	Pro
545					550					555					560
Asn	Leu	Val	Thr	Asp	Ile	Lys	Tyr	Asn	Asn	Thr	Gly	Asn	Gly	Asn	Ile
				565					570					575	
Ser	Phe	Thr	Val	Asp	Lys	Asn	Thr	Ile	Arg	Gln	Gly	Asn	Ala	Ile	Ile
			580					585					590		
Ala	Ile	Lys	Asp	Ala	Gly	Asp	Asn	Val	Leu	Trp	Ser	Trp	His	Ile	Trp
		595					600					605			
Val	Thr	Asp	Glu	Asp	Ile	Asn	Asn	Val	Ile	Glu	Ile	Thr	Asn	Phe	Gln
610						615					620				
Gly	Lys	Lys	Tyr	Lys	Leu	Met	Ser	Val	Asn	Leu	Gly	Trp	Cys	Asp	Gly
625					630					635					640
Ser	Thr	Thr	Asn	Tyr	Ala	Glu	Arg	Ser	Cys	Lys	Val	Lys	Phe	Thr	Ala
				645					650					655	
Gly	Gly	Glu	Ser	Gln	Thr	Ile	Thr	Ile	Arg	Gln	Ala	Ser	Lys	Ser	Ile
				660				665						670	
Val	Val	Gly	Gly	Asn	Asn	Pro	Tyr	Gln	Trp	Gly	Arg	Lys	Asp	Pro	
		675					680						685		
Phe	Leu	Pro	Ser	Asn	Gly	Leu	Arg	Asp	Ile	Asn	Lys	Thr	Trp	Tyr	Asp
690						695					700				
Lys	Asp	Gly	Asn	Ala	His	Thr	Gly	Ser	Pro	Lys	Thr	Glu	Asp	Phe	Ser
705					710					715					720
Ile	Gly	Ala	Pro	Cys	Ile	Thr	Asn	Tyr	Ile	Leu	Lys	Pro	Asp	Val	Met
				725					730					735	
Gln	Ser	Gln	Asp	Tyr	Gly	Asp	Asn	Thr	Tyr	Ala	Asn	Leu	Trp	Ser	Ala
				740				745					750		
Asp	Asn	Asn	Val	Tyr	Thr	Ala	Asn	Asp	Glu	Asn	Val	Ile	Lys	Thr	Ile
		755					760					765			
Tyr	Asp	Pro	Ser	Pro	Val	Gly	Phe	Lys	Val	Pro	Pro	Ser	Asn	Ala	Phe
770						775						780			
Thr	Gly	Phe	Thr	Thr	Thr	Gly	Asn	Asn	Thr	Ser	Thr	Ser	Ser	Glu	Ile
785					790					795					800
Asn	Gly	Thr	Trp	Asp	Ser	Ser	Leu	Lys	Gly	Trp	Asn	Phe	Tyr	Thr	Asp
				805					810					815	
Ser	Ser	Lys	Asn	Lys	Thr	Ile	Phe	Phe	Pro	Ala	Ser	Gly	Phe	Arg	Asp
			820					825					830		

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<210> 6664
<211> 87
<212> PRT
<213> B.fragilis
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<210> 6665
<211> 67
<212> PRT
<213> B.fragilis
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<210> 6666
<211> 61
<212> PRT
<213> B.fragilis
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<400> 6666
Glu Asn Gly Arg Ala Asn Arg Pro Cys Thr Glu Pro Glu Val His Thr
1          5          10          15
Gln Ser Lys His Asn His Pro Leu Arg Val Ile Pro Glu Ser Lys Pro
20          25          30
Lys Asn Asn Glu Ser Leu Glu Lys Ser Leu Pro Thr Met Pro Val His
35          40          45
Leu Ser Ala Ile Ile His Ser Ser Pro Gly Lys Gly Gly
50          55          60

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<210> 6667
 <211> 171
 <212> PRT
 <213> B.fragilis

<400> 6667

Lys Pro Gln Arg Met Lys Ser Leu Ser Phe Arg Lys Asp Leu Ile Gly
 1 5 10 15
 Val Gln Glu Glu Leu Leu Arg Phe Ala Tyr Lys Leu Thr Ala Asn Arg
 20 25 30
 Glu Glu Ala Asn Asp Leu Leu Gln Glu Thr Ser Leu Lys Ala Leu Asp
 35 40 45
 Asn Glu Asp Lys Phe Met Pro Asp Thr Asn Phe Lys Gly Trp Met Tyr
 50 55 60
 Thr Ile Met Arg Asn Ile Phe Ile Asn Asn Tyr Arg Lys Ile Val Arg
 65 70 75 80
 Asp Gln Thr Tyr Val Asp Gln Thr Asp Asn Leu Phe His Leu Asn Leu
 85 90 95
 Pro Gln Asp Ser Gly Phe Glu Ser Thr Glu Gly Ala Tyr Asp Leu Lys
 100 105 110
 Glu Met His Arg Val Val Asn Ala Leu Pro Lys Glu Tyr Lys Val Pro
 115 120 125
 Phe Ser Met His Val Ser Gly Phe Lys Tyr Arg Glu Ile Ala Glu Lys
 130 135 140
 Leu Glu Leu Pro Leu Gly Thr Val Lys Ser Arg Ile Phe Phe Thr Arg
 145 150 155 160
 Gln Arg Leu Gln Gln Glu Leu Lys Asp Phe Val
 165 170

<210> 6668
 <211> 744
 <212> PRT
 <213> B.fragilis

<400> 6668

Asp Arg Phe Ser Ile Val Tyr Ser Gly Ile Ile Ile His Gly Ile Asp
 1 5 10 15
 Asp Leu Pro Thr Gly Cys Lys Gly Leu Asn Val Pro Leu His Ser Leu
 20 25 30
 Thr Ala Val Gln Ala Asn Lys Tyr Lys Thr Glu Glu Met Lys Val His
 35 40 45
 Lys Lys Asn Pro Ser Trp Met Ala Gly Gly Met Ala Thr Met Leu Leu
 50 55 60
 Cys Thr Leu Leu Phe Ser Cys Asn Asn Glu Asp Phe Leu Glu Ser Gly
 65 70 75 80
 Asn Pro Glu Lys Ala Gly Asp Asn Ile Cys Phe Gly Ile Ser Ser Asp
 85 90 95
 Lys Asn Met Gln Thr Arg Gly Tyr Ala Gly Ser Asp Asp Glu Gly Tyr
 100 105 110
 Thr Ala Asp Arg Phe Val Leu Arg Ser Asp Asp Ser Ala Asp Thr Leu
 115 120 125
 Cys Val Arg Ala Ile Val Ser Asp Gly Ile Asn Val Ser Gly Phe Glu
 130 135 140
 Gly Glu Gln Ala Leu Thr Arg Gly Thr Leu Val Gly Lys Asp Asn Phe
 145 150 155 160
 Tyr Asn Lys Phe His Val Leu Ala Tyr Trp Ser Lys Asn Gly Ala Ser
 165 170 175
 Ile Asp Gln Phe Tyr Met Asn Thr Asn Ala Ser Asn Ala Ala Ala Ser

Val Gly Thr Gly Ala Ile Trp	Ser Thr Glu Gln Ile Tyr Tyr Trp Pro
180	185
195	200
Gly Ala Asp His Ser Phe Gln Phe Tyr Ala Trp Ala Pro Thr Asp Ala	205
210	215
Gly Gly Leu Ile Thr Pro Ser Asp Pro Ser Ser Lys Glu Leu Lys Tyr	220
225	230
Thr Val Pro Ala Asp Ala Ala Asp Gln Lys Asp Ile Val Val Ala Thr	235
245	250
Thr Asn Glu Ile Pro Gly Asn Asn Asn Ala Ala Val Pro Leu Asn Phe	255
260	265
Lys His Ile Cys Thr Ala Val Arg Phe Ala Val Gly Ser Gln Met Gln	270
275	280
Pro Gly Ser Ile Lys Ser Val Ala Leu Lys Gly Val Lys Asn Ala Gly	285
290	295
Thr Tyr Asp Met Val Ala Gly Thr Trp Thr Leu Gly Asp Ala Thr Val	300
305	310
Asp Phe Ser Gln Glu Leu Asn Lys Glu Thr Thr Gly Ser Glu Ala Asn	315
325	330
Gly Ala Glu Ile Thr Ser Ala Glu Gly Thr Phe Met Met Leu Pro Gln	335
340	345
Thr Leu Pro Ala Asp Ala Met Val Glu Val Val Phe Thr Asn Ala Asn	350
355	360
Ala Ser Gly Val Asp Arg Thr Leu Thr Ala Ser Ile Gly Asn Thr Glu	365
370	375
Trp Lys Thr Gly Thr Thr Val Thr Tyr Ile Leu Ser Ile Thr Pro Glu	380
385	390
Tyr Glu Leu Glu Phe Val Ser Gln Pro Glu Thr Gln Asp Ala His Tyr	395
405	410
Val Ile Tyr Pro Ile Ala Ile Lys Ala Asp Lys Phe Pro Glu Gly Gly	415
420	425
Trp Thr Leu Thr Ser Asn Asp Lys Glu Asn Val Thr Phe Val Glu Lys	430
435	440
Phe Ala Asp Asp Gly Ile Lys Asn Leu Val Asp Gln Gly Tyr Trp Leu	445
450	455
Lys Asp Tyr Cys Gly Ala Ser Thr Leu Thr Gly Ser Ser Phe Gly Glu	460
465	470
Val Pro Ile Tyr Val Phe Leu Lys Glu Asn Ile Ser Glu Lys Asp Arg	475
485	490
Glu Ile Val Leu Ser Leu Ala Pro Ala Asn Asp Pro Asn Ala Lys Pro	495
500	505
Lys Thr Phe Thr Phe Lys Gln His Cys Pro Ala Trp Asn Asn Gly Ile	510
515	520
Gly Val Glu Arg Ile Gln Gly Lys Asp Tyr Pro Trp Gly Phe Asn Trp	525
530	535
Ser Ser Asp Met Lys Ile Thr Tyr Ser Met Pro Ser Gly Leu Trp Ser	540
545	550
Gly Ile Ile His Val Leu Phe Glu Ile Phe Gly Asp His Ser Tyr Val	555
565	570
Glu Ser Ser Gly Leu Ala Val Leu Gly Thr Trp Lys Val Ile Val Asn	575
580	585
Phe Ala Lys Val Pro Ser Leu Thr Ile Ala Ile Ser Pro Thr Asp Gly	590
595	600
Ile Thr Asn Thr Trp Glu Leu Tyr Asn Phe Asp Gly Ile Asn Glu Ala	605
610	615
Ser Ile Ile Met Ser Gln Leu Glu Ser Trp Gly Gly Val Pro Asp Lys	620
625	630
Glu Leu Pro Val Asn Pro Ser Glu Phe Val Ala Trp Ala Cys Ala Lys	635
645	650
	655

180 185 190
 195 200 205
 210 215 220
 225 230 235
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555
 565 570 575
 580 585 590
 595 600 605
 610 615 620
 625 630 635
 645 650 655

Lys Asn Arg Phe Gly Val Glu Arg Lys Ser Asn Ser Gly Glu Thr Ile
 660 665 670
 Tyr Val Pro Thr Leu Glu Gln Thr Asp Met Val Trp Tyr Leu Pro Ala
 675 680 685
 Gln Glu Glu Ala Leu Tyr Met Lys Asp Asp Leu Ser Glu Asn Tyr Trp
 690 695 700
 Thr Ser Thr Ala Ile Thr Asp Pro Gly Thr Thr Ala Tyr Thr Tyr Thr
 705 710 715 720
 Ala Glu Ser Gly Ser Thr Ser Gly Met Asp Arg Asn Glu Val Ile His
 725 730 735
 Val Arg Ala Val Arg Lys Lys Pro
 740

<210> 6669

<211> 497

<212> PRT

<213> B.fragilis

<400> 6669

Arg Gly Gly Ser Arg Ile Asp Arg Leu Pro Arg Ser Phe Tyr Phe Arg
 1 5 10 15
 Ser Tyr Ile Gly Phe His Ile Ile Asp Leu Tyr Ile Leu Phe Leu Gln
 20 25 30
 Lys Arg Ile Ser Thr His Ser Phe Leu Thr Tyr Met Tyr Thr Glu Ile
 35 40 45
 Ile Asn Lys Tyr Asn Val Pro Val Pro Arg Tyr Thr Ser Tyr Pro Pro
 50 55 60
 Ala Asn Tyr Phe Glu Pro Phe Thr Asn Ala Arg Tyr Leu Glu Ala Val
 65 70 75 80
 Gln Gln Ser Asn Gln Ala Ser Glu Arg Ala Leu Ser Phe Tyr Leu His
 85 90 95
 Ile Pro Phe Cys Arg His Leu Cys His Tyr Cys Gly Cys Asn Ser Tyr
 100 105 110
 Pro Met Ala Arg Pro Glu Ile Ile Glu Ser Tyr Val Val Ala Leu His
 115 120 125
 Gln Glu Ile Asp Leu Ile Leu Pro Leu Leu Asp Lys Asp Arg Pro Ile
 130 135 140
 Ala Gln Ile His Tyr Gly Gly Ser Pro Thr Ala Ile Pro Val Ala
 145 150 155 160
 Leu Ile Lys Glu Leu Asn Ala His Leu Leu Ser Ser Phe Pro Ala Ile
 165 170 175
 Asp Arg Pro Glu Ile Ala Ile Glu Cys His Pro Gly Tyr Leu Ser Glu
 180 185 190
 Lys Asp Trp Leu Gln Leu Thr Glu Cys Gly Phe Asn Arg Leu Ser Ile
 195 200 205
 Gly Val Gln Asp Phe Asn Ile Glu Val Leu Lys Thr Val Asn Arg Arg
 210 215 220
 Pro Ser Leu Leu Pro Met Glu Asp Ile Phe Ile Leu Leu Arg Glu Lys
 225 230 235 240
 Gly Ile Ser Ile Asn Leu Asp Phe Leu Tyr Gly Leu Pro Lys Gln Thr
 245 250 255
 Val Glu Asn Phe Thr Arg Asn Ile Lys Gln Ala Ile Leu Leu Ser Pro
 260 265 270
 Asp Arg Leu Val Met Phe Ser Tyr Ala His Val Pro Trp Ile Asn Lys
 275 280 285
 Arg Gln Leu Leu Leu Glu Lys Ser Gly Leu Pro Asp Asn His Glu Lys
 290 295 300
 Gln Thr Met Phe Asp Thr Ala Ala Gly Leu Leu His Lys Ser Gly Tyr
 305 310 315 320

Gln Ser Ile Gly Met Asp His Phe Val Leu Pro Asn Asp Glu Leu Ser
 325 330 335
 Ile Ala Met Gln Thr Lys Lys Leu His Arg Asn Phe Gln Gly Tyr Cys
 340 345 350
 Thr Arg Arg Thr Thr Ala Gln Val Tyr Gly Leu Gly Val Thr Ala Ile
 355 360 365
 Ser Gln Leu Glu Ser Ala Tyr Ala Gln Asn Thr Lys Asp Ile Pro His
 370 375 380
 Tyr Ile Lys Thr Ile Ser Lys Gly Glu Leu Ser Ile Thr Lys Gly Tyr
 385 390 395 400
 Ala Leu Ser Pro Thr Glu Gln Leu Thr Arg Glu Val Ile Glu Thr Leu
 405 410 415
 Met Cys Asn Gly Cys Ile Asp Trp Arg Asp Leu Ser Lys Arg Leu His
 420 425 430
 Val Ser Val Ser Thr Leu Lys Ala Ala Thr Ala Tyr Asp Glu Lys Lys
 435 440 445
 Leu Ser Gly Phe Ala Asp Asp Gly Leu Ile Tyr Tyr Thr Asp Asp Tyr
 450 455 460
 Leu Glu Met Thr Thr Ala Gly Ser Ala Phe Val Arg Asn Val Ala Ala
 465 470 475 480
 Ser Leu Asp Lys Leu Met Leu His Ser Pro His Ser Tyr Ser Lys Pro
 485 490 495

Leu

<210> 6670

<211> 71

<212> PRT

<213> B.fragilis

<400> 6670

Arg Gln Ile Arg Pro Ser Lys Ser Ser His Lys Arg Tyr Val Ile Tyr
 1 5 10 15
 His Ile Val Thr Lys Val Lys Glu Gln Gly Gly Gly Pro Ser Leu Thr
 20 25 30
 Pro Ser Phe Ala Gln Leu Lys Asn Tyr Thr Lys Ser Leu Pro Lys Ile
 35 40 45
 Asn Leu Phe Ile Asn Glu Lys Tyr Leu Ile Lys Gln Ser Pro Ser Val
 50 55 60
 Pro Val Ala Ile Ser Asp Gly
 65 70

<210> 6671

<211> 426

<212> PRT

<213> B.fragilis

<400> 6671

Ile Met Lys Arg Gly Lys Arg Leu Ile Leu Pro Leu Leu Gly Thr Leu
 1 5 10 15
 Ile Leu Thr Ser Leu Phe Ser Cys Gly Val Asp Arg Trp Pro Glu Tyr
 20 25 30
 Tyr Pro Glu Thr Gly Arg Asp Ile Trp Ile Asp Ser Val Met Arg Gln
 35 40 45
 Glu Tyr Leu Trp Tyr Arg Asp Met Ser Ser Pro Ala Ala Pro Asp Tyr
 50 55 60
 Phe Gln Lys Pro Glu Ala Phe Leu Lys Lys Ala Val Ala Ser Met Asp
 65 70 75 80
 Asn Gly Phe Ser Lys Ile Asp Ser Leu Leu Asp Glu Pro Ile Pro Ser

				85				90						95		
Tyr	Gly	Phe	Asp	Tyr	Thr	Leu	Tyr	Lys	Val	Leu	Asp	Asn	Asp	Thr	Ala	
			100					105					110			
Tyr	Asn	Ala	Leu	Ile	Ser	Tyr	Val	Val	Pro	Gly	Ser	Pro	Ala	Glu	Glu	
		115					120					125				
Ala	Gly	Leu	Gln	Arg	Gly	His	Trp	Ile	Met	Met	Met	Asn	Gly	Asp	Tyr	
	130				135					140						
Ile	Thr	Lys	Lys	Val	Glu	Ser	Glu	Leu	Leu	Gln	Gly	Ser	Thr	Arg	Gln	
145				150					155					160		
Leu	Gln	Ile	Gly	Val	Tyr	Lys	Glu	Val	Val	Gly	Glu	Asp	Gly	Glu	Val	
			165				170							175		
Thr	Gly	Gly	Val	Val	Pro	Ile	Gly	Glu	Thr	Thr	Met	Pro	Ala	Ser	Arg	
			180				185						190			
Ser	Leu	Val	Asp	Lys	Pro	Val	His	Arg	Phe	Glu	Ile	Ile	Pro	Trp	Asn	
		195				200					205					
Gly	Lys	Lys	Val	Gly	Tyr	Leu	Met	Tyr	Asn	Glu	Phe	Lys	Ala	Gly	Pro	
	210					215				220						
Thr	Thr	Asp	Ser	Gln	Ala	Tyr	Asn	Asp	Asp	Leu	Arg	Arg	Ala	Phe	Arg	
225				230						235					240	
Asp	Phe	Gln	Thr	Gly	Gly	Val	Asn	Glu	Phe	Val	Leu	Asp	Leu	Arg	Tyr	
			245					250						255		
Asn	Thr	Gly	Gly	Ser	Leu	Asp	Cys	Ala	Gln	Leu	Leu	Cys	Thr	Met	Leu	
		260					265						270			
Ala	Pro	Ala	Asp	Lys	Met	Asn	Gln	Leu	Leu	Ala	Leu	Leu	Arg	Tyr	Ser	
		275					280					285				
Asp	Lys	Arg	Val	Glu	Ala	Asn	Gln	Asp	Leu	Thr	Phe	Asn	Pro	Glu	Leu	
	290					295					300					
Ile	Gln	Ser	Gly	Ala	Asn	Leu	Asn	Leu	Ser	Thr	Val	Tyr	Val	Leu	Thr	
305				310					315					320		
Thr	Asn	Ala	Thr	Arg	Gly	Ala	Ala	Glu	Met	Val	Ile	Asn	Cys	Leu	Asn	
			325					330						335		
Pro	Tyr	Met	Lys	Val	Val	Leu	Ile	Gly	Thr	Lys	Thr	Ala	Gly	Glu	Tyr	
			340					345					350			
Val	Ala	Thr	Lys	Pro	Phe	Val	His	Pro	Thr	Asp	Arg	Phe	Ile	Leu	Asn	
		355				360					365					
Leu	Val	Val	Cys	Asn	Val	Tyr	Asn	Ala	Glu	Glu	Lys	Ser	Asp	Tyr	Ala	
	370				375					380						
Thr	Gly	Phe	Lys	Pro	Thr	Tyr	Glu	Tyr	Asn	Glu	Asp	Ser	Tyr	Leu	Ser	
385				390					395					400		
Thr	Tyr	Leu	Pro	Phe	Gly	Asn	Thr	Asn	Glu	Thr	Leu	Leu	Asn	Ala	Ala	
			405					410						415		
Leu	Lys	Ile	Met	Ser	Gly	Ile	Thr	Asp	Lys							
			420					425								

<210> 6672

<211> 203

<212> PRT

<213> B.fragilis

<400> 6672

Ile	Thr	Ile	Leu	Ile	Leu	Lys	Ser	Met	Lys	Lys	Asn	Phe	Ile	Thr	Val
1			5					10					15		
Thr	Pro	Asp	Ser	Gly	Thr	Ser	Gly	Ser	Ser	Asn	Thr	Ile	Ser	Val	Ala
		20					25					30			
Ala	Glu	Pro	Asn	Ile	Leu	Leu	Lys	Glu	Arg	Ser	Glu	Ile	Leu	Asn	Phe
		35				40					45				
Asn	Ala	Ser	Gly	Gly	Val	Ser	Lys	Ser	Val	Gln	Val	Ile	Gln	Asn	Ser
	50				55					60					
Met	Pro	Tyr	Phe	Pro	Ile	Arg	Phe	Pro	Phe	Val	Leu	Asn	Met	Asn	Lys

65 70 75 80
 Phe Ile Gly Asn Leu Lys Val Asp Ser Ser Gly Val Leu Gln Gly Ala
 85 90 95
 Tyr Ser Ile Ser Glu Ile Lys Ser Ile Asp Pro Ser Ala Tyr Asp Ser
 100 105 110
 Ser Leu Gly Glu Gly Trp Gly Met Gly Ser Thr Gln Lys Met Leu Ile
 115 120 125
 Tyr Asp Pro Phe Ser Asn Val Thr Glu Ile Val Ala His Ile Ile Asp
 130 135 140
 Ser Ser Gly Thr Tyr Asp Ala Asn Phe Ile Ser Ser Asn Ala Asn Met
 145 150 155 160
 Gly Arg Ile Trp Gly Asp Pro Gly Leu Leu Tyr Gln Lys Leu Leu Lys
 165 170 175
 Ile Ile Ser Glu Asp Tyr Thr Lys Gly Gly Tyr Glu Ile Arg Ile Asn
 180 185 190
 Ser Val Leu Ala Met Lys Phe Val Phe Val Glu
 195 200

<210> 6673
 <211> 388
 <212> PRT
 <213> B.fragilis

<400> 6673
 Ser Asn Ile Ile Ile Phe Met Lys Lys Asn Leu Leu Phe Thr Ala Ile
 1 5 10 15
 Ala Val Ala Val Leu Ala Ser Cys Ser Asn Asp Asp Val Val Asp Val
 20 25 30
 Asn Asn Gly Ser Gly Ile Ser Phe Arg Ala Ser Leu Asp Lys Ala Ile
 35 40 45
 Thr Arg Ser Asn Val Thr Asn Leu Gln Asn Leu Ala Ala Phe Asn Val
 50 55 60
 Thr Ala Ile Gly Asn Gly Ala Asn Phe Phe Thr Asp Leu Ser Val Thr
 65 70 75 80
 Ser Thr Asp Asn Gly Thr Asn Trp Thr Thr Ala Ser Thr Tyr Tyr Trp
 85 90 95
 Pro Asn Tyr Ala Leu Ser Phe Phe Ala Tyr Ala Pro Gln Thr Pro Gly
 100 105 110
 Gly Thr Val Ser Ile Asp Asn Thr Ala Lys Lys Ile Thr Gly Phe Ser
 115 120 125
 Pro Ala Gln Ser Val Ala Asp Gln Lys Asp Leu Val Ile Ser Tyr Asn
 130 135 140
 Thr Gly Thr Lys Gly Ser Asn Glu Asn Ala Gly Val Ala Met Asn Phe
 145 150 155 160
 Lys His Ala Leu Ser Gln Ile Val Val Asn Ala Lys Cys Ser Asn Asp
 165 170 175
 Lys Ile Lys Ile Glu Val Leu Gly Val Lys Leu Val Asn Ala Ala Ala
 180 185 190
 Lys Ala Asp Phe Ala Phe Pro Glu Ala Val Thr Asn Thr Gly Tyr Thr
 195 200 205
 Leu Pro Gln Gly Gln Trp Ser Asn Leu Ser Glu Lys Asp Asp Pro Ser
 210 215 220
 Lys Ala Tyr Met Ile Arg Gly Asp Ala Pro Leu Thr Leu Thr Ala Asp
 225 230 235 240
 Ala Gln Ser Ile Met Phe Gly Asp Asn Asn Leu Met Leu Ile Pro Gln
 245 250 255
 Gln Leu Thr Ala Trp Asn Gly Thr Val Ala Thr Ala Gly Ala Tyr Leu
 260 265 270
 Ser Val Leu Cys Arg Ile Tyr Ser Leu Asp Gly Gly Asn Glu Thr Leu

275 280 285
 Leu Tyr Pro Glu Pro Thr Ser Thr Asp Asp Lys Ser Gly Lys Tyr Ala
 290 295 300
 Phe Ser Ala Ile Gly Ile Asn Thr Asn Trp Glu Pro Gly Lys Lys Tyr
 305 310 315 320
 Thr Tyr Thr Leu Asn Phe Cys Gly Asp Gly Gly Gly Gly Lys Ile
 325 330 335
 Asp Pro Thr Pro Thr Asp Pro Thr Lys Pro Thr Asp Pro Thr Val Asp
 340 345 350
 Pro Thr Pro Ile Asp Gly Gly Ser Gly Gly Asp Pro Ile Leu Gly Lys
 355 360 365
 Pro Ile Lys Phe Thr Val Thr Val Asp Asp Trp Thr Asp Gln Pro Val
 370 375 380
 Asp Val Pro Met
 385

<210> 6674

<211> 291

<212> PRT

<213> B.fragilis

<400> 6674

Asn Asp Val Met Lys Leu Leu Tyr Phe Lys Glu His Leu Ser Cys Ile
 1 5 10 15
 Asn Tyr Gln Ile Asn Val Asn Thr Gly Phe Val Tyr Tyr Asn Leu Glu
 20 25 30
 Lys Asp Ser Val Ser Lys Ile Asp Asn Ser Ala Ser Pro Cys Ile Leu
 35 40 45
 Phe Leu Leu Asp Gly Glu Val Ser Ile Asp Ser Gly Glu Tyr Gln Asn
 50 55 60
 Val His Ile Glu Lys Asp Lys Met Val Leu Ile Pro Gln His Val Asp
 65 70 75 80
 Asn Lys Ile Glu Val Ile Tyr Asp Ala Lys Cys Leu Leu Leu Phe Trp
 85 90 95
 Asn Lys Asp Ile Arg Val Cys Asp Lys Val Tyr Met Asn Ser Leu Ser
 100 105 110
 Ser Tyr Lys Glu Arg Lys Lys Glu Met Cys Val Leu Pro Ile Arg Asp
 115 120 125
 Pro Leu Gln Ala Val Leu Asn Ser Val Val Ala Tyr Leu Tyr Ala Lys
 130 135 140
 Met Gln Cys Lys His Met His Leu Ile Lys Gln Glu Val Leu Leu
 145 150 155 160
 Val Leu Arg Gly Tyr Tyr Thr Lys Lys Glu Leu Phe Thr Phe Phe Ser
 165 170 175
 Ser Ile Leu Gly Asn Thr Gly His Phe Glu Asp Phe Val Met Asn Asn
 180 185 190
 Tyr Arg Lys Val Lys Ser Val Lys Glu Phe Ala Gly Leu Tyr Cys Thr
 195 200 205
 Ser Glu Arg Ser Phe Asn Arg Lys Phe Gln Asn Cys Phe Lys Glu Ser
 210 215 220
 Pro Tyr Gln Trp Met Gln Lys Lys Lys Ala Glu Leu Ile Arg Glu Lys
 225 230 235 240
 Ile Ser Glu Ser Asp Thr Pro Phe Gln Glu Ile Ala Met Asp Phe Asp
 245 250 255
 Phe Asn Ser Gln Ala His Phe Thr Ser Tyr Cys Lys Arg Leu Phe Gly
 260 265 270
 Met Thr Pro Ser Lys Leu Arg Thr Glu Ser Lys Lys Val Ala Pro Asp
 275 280 285
 Leu Glu Tyr

[illegible]

<400> 6675

Ser 1	Asn	Asp	Met	Asn 5	His	Met	Arg	Ile	Asn 10	Lys	Leu	Ser	Pro	Leu 15	Ser
Arg	Lys	Ala	Leu 20	Asn	Leu	Ser	Thr	Phe 25	Phe	Cys	Leu	Tyr	Ile 30	Ala	Gln
Ala	Ile	Pro	Met	Ser	Phe	Phe	Ser	Thr	Ala	Ile	Gln	Val	Leu 45	Met	Arg
Gln	Ala	Asp	Tyr	Ser	Leu	Ser	Ser	Ile	Ala	Leu	Leu	Gln	Leu	Ile	Lys
Leu 65	Pro	Trp	Ile	Leu	Lys 70	Phe	Leu	Trp	Ala	Pro	Leu	Val	Asp	Arg	His
Cys	Ile	Thr	Leu	Lys 85	Asp	Tyr	Lys	Arg	Cys	Ile	Ile	Thr	Ser	Glu	Ile
Val	Tyr	Ala	Leu 100	Leu	Ile	Leu	Met	Val	Gly	Leu	Leu	Asp	Ile	Gln	Thr
Asp	Leu	Tyr	Leu 115	Ile	Ile	Gly	Leu	Val	Phe	Leu	Ser	Leu	Ile	Ala	Ser
Ala	Thr	Gln	Asp	Ile	Ala	Thr	Asp	Thr	Leu	Ala	Val	Leu	Ser	Phe	Gly
Lys 145	Ser	Asp	Lys	Ser	Leu	Val	Asn	Ser	Met	Gln	Ser	Met	Gly	Ser	Phe
Gly	Gly	Thr	Leu	Ile	Gly	Thr	Gly	Ile	Leu	Leu	Leu	Val	Leu	Gln	His
Tyr	Gly	Trp	His 180	Val	Val	Ile	Pro	Cys	Leu	Cys	Ile	Phe	Val	Leu	Leu
Ala	Ile	Ile	Pro	Leu	Leu	Lys	Asn 200	Lys	His	Met	Lys	Ile	Ile	Pro	Lys
Glu	Pro	Ser	Lys	Arg	Ala	Gln	Phe	Thr	Asp	Phe	Ile	Trp	Phe	Phe	Ala
Arg 225	Arg	Asn	Ile	Trp	Lys	Gln	Ile	Gly	Phe	Leu	Leu	Leu	Tyr	Tyr	Ala
Ser	Ile	Ile	Gly	Ile	Leu	Ser	Val	Leu	Arg	Ser	Tyr	Leu	Val	Asp	Leu
Gly	Tyr	Ser	Met	Lys	Glu	Ile	Gly	Ile	Met	Ile	Gly	Ile	Gly	Gly	Thr
Gly	Ala	Ala	Phe	Ala	Ser	Ser	Phe	Leu	Ala	Gly	Leu	Leu	Val	Arg	Lys
Ile	Gly	Arg	Tyr	His	Ser	Arg	Ile	Leu	Phe	Ala	Ile	Phe	Ile	Leu	Leu
Thr 305	Thr	Leu	Tyr	Phe	Met	Cys	Ile	Ser	Trp	Thr	Val	Pro	Ser	Phe	Ser
Met	Leu	Cys	Leu	Gly	Ile	Val	Leu	Leu	Trp	Ser	Ala	Tyr	Gly	Met	Ala
Thr	Ile	Val	Val	Tyr	Thr	Thr	Ser	Met	Asp	Cys	Val	Arg	Lys	Gly	Cys
Glu	Gly	Thr	Asp	Phe	Thr	Ile	Gln	Thr	Val	Leu	Thr	His	Leu	Ser	Gly
Leu	Leu	Ile	Ala	Phe	Leu	Ser	Gly	Val	Val	Ala	Gly	Leu	Thr	Gly	Tyr
His 385	Gly	Leu	Phe	Ile	Phe	Glu	Val	Ile	Leu	Ala	Ser	Ile	Ser	Leu	Ile
Tyr	Ile	Phe	Tyr	Phe	Phe	Arg	Lys	Glu	Ser	Gln	Pro	Ile	His	Ser	

<210> 6676
 <211> 283
 <212> PRT
 <213> B.fragilis

<400> 6676

Lys His Ile Met Lys Ser Leu Glu Thr Met Ala Arg Tyr Lys Lys Glu
 1 5 10 15
 Leu Thr Glu Cys Ala Arg Asn Leu Lys Leu Pro Phe Leu Ala Glu His
 20 25 30
 Leu Asp Glu Ile Leu His Glu Ala Gln Glu Lys Gln Gln Thr Tyr Ser
 35 40 45
 Glu Phe Leu Ser Thr Cys Leu Met Arg Glu Leu Arg Asp Lys Glu Arg
 50 55 60
 Arg Ser Tyr Leu Thr Arg Leu Lys Phe Ala Gly Leu Pro Ala Arg Tyr
 65 70 75 80
 Asp Leu Asp Leu Tyr Asp Phe Ser Arg Thr Glu Gly Ile Asp Gln Arg
 85 90 95
 Gln Met Arg Glu Leu Arg Glu Leu Val Trp Ile Arg Arg Thr Tyr Asn
 100 105 110
 Leu Leu Leu Val Gly Asp Ser Gly Thr Gly Lys Thr Phe Ile Ala Ser
 115 120 125
 Gly Leu Ile His Glu Ala Val Lys Ala Gly Tyr Lys Ala Tyr Leu Leu
 130 135 140
 Thr Leu Glu Glu Leu Leu Val Cys Leu Lys Ala Lys Glu Ile Ser Arg
 145 150 155 160
 Pro Ala Met Lys Thr Tyr Lys Arg Ile Met Lys Ala Gln Leu Leu Ala
 165 170 175
 Ile Asp Asp Val Thr Leu Phe Pro Leu Lys Gly Glu Asp Val Leu Leu
 180 185 190
 Leu Phe Lys Leu Val Asn Cys Val Gln Gly Lys Thr Ser Leu Ile Ile
 195 200 205
 Ala Ala Ser Arg Asp Leu Thr Gly Trp Leu Glu Met Ala Gly Asp Glu
 210 215 220
 Val Cys Ala Ala Ala Leu Leu Asp Arg Leu Leu Tyr Cys Cys Glu Ile
 225 230 235 240
 Ile Arg Leu Leu Gly Lys Ser Tyr Arg Met Glu Asn Arg Lys Thr Ile
 245 250 255
 Phe Ser Asn Gln Gln Ile Gly Thr Ala Pro Gln Lys Gly Leu Met Lys
 260 265 270
 Val Lys Lys Arg Thr Lys Glu Ser Gly Tyr Cys
 275 280

<210> 6677
 <211> 594
 <212> PRT
 <213> B.fragilis

<400> 6677

Leu Thr Ala Met Lys Lys Glu Ile Lys Phe Ser Leu Val Tyr Arg Asp
 1 5 10 15
 Met Trp Gln Ser Ser Gly Lys Tyr Gln Pro Arg Val Asp Gln Leu Val
 20 25 30
 Arg Ile Ala Pro Leu Ile Ile Glu Met Gly Cys Phe Ala Arg Val Glu
 35 40 45
 Thr Asn Gly Gly Ala Phe Glu Gln Val Asn Leu Leu Tyr Gly Glu Asn
 50 55 60

Pro	Asn	Lys	Ala	Val	Arg	Ala	Phe	Thr	Lys	Pro	Phe	Asn	Asp	Ala	Gly
65					70					75					80
Ile	Gln	Thr	His	Met	Leu	Asp	Arg	Gly	Leu	Asn	Gly	Leu	Arg	Met	Tyr
				85					90					95	
Pro	Val	Pro	Ala	Asp	Val	Arg	Arg	Leu	Met	Tyr	Lys	Val	Lys	His	Ala
			100					105					110		
Gln	Gly	Val	Asp	Ile	Thr	Arg	Ile	Phe	Cys	Gly	Leu	Asn	Glu	Val	Arg
	115						120					125			
Asn	Ile	Ile	Pro	Ser	Ile	His	Tyr	Ala	Leu	Glu	Gly	Gly	Met	Ile	Pro
	130					135					140				
Gln	Ala	Thr	Leu	Cys	Ile	Thr	Phe	Ser	Pro	Val	His	Thr	Val	Glu	Tyr
145				150						155					160
Tyr	Thr	Ala	Ile	Ala	Asp	Lys	Leu	Ile	Glu	Ala	Gly	Ala	Pro	Glu	Ile
			165						170					175	
Cys	Leu	Lys	Asp	Met	Ala	Gly	Val	Gly	Arg	Pro	Ala	Met	Leu	Gly	Gln
			180					185					190		
Leu	Thr	Lys	Ala	Ile	Lys	Glu	Arg	His	Pro	Glu	Val	Leu	Ile	Gln	Tyr
	195						200					205			
His	Gly	His	Ser	Gly	Pro	Gly	Leu	Ser	Met	Ala	Ser	Ile	Leu	Glu	Val
	210					215					220				
Cys	Glu	Asn	Gly	Ala	Asp	Ile	Ile	Asp	Val	Ala	Met	Glu	Pro	Met	Ser
225				230						235					240
Trp	Gly	Lys	Val	His	Pro	Asp	Val	Ile	Ser	Val	Gln	Ala	Met	Leu	Lys
			245						250					255	
Asp	Ala	Gly	Phe	Arg	Val	Pro	Glu	Ile	Asn	Met	Lys	Ala	Tyr	Met	Lys
		260						265					270		
Ala	Arg	Ala	Met	Thr	Gln	Glu	Phe	Ile	Asp	Asp	Phe	Leu	Gly	Tyr	Phe
	275						280					285			
Met	Asp	Pro	Thr	Asn	Lys	His	Met	Ser	Ser	Leu	Leu	Leu	Lys	Cys	Gly
	290					295					300				
Leu	Pro	Gly	Gly	Met	Met	Gly	Ser	Met	Met	Ala	Asp	Leu	Lys	Gly	Val
305				310						315					320
His	Ala	Gly	Ile	Asn	Met	Ile	Leu	Lys	Ser	Asn	Asn	Gln	Pro	Glu	Leu
			325						330					335	
Ser	Ile	Asp	Asp	Leu	Leu	Val	Met	Leu	Phe	Asp	Glu	Val	Glu	Tyr	Val
		340						345					350		
Trp	Pro	Lys	Leu	Gly	Tyr	Pro	Pro	Leu	Val	Thr	Pro	Phe	Ser	Gln	Tyr
	355						360					365			
Val	Lys	Asn	Val	Ala	Leu	Met	Asn	Val	Met	Ala	Arg	Val	Lys	Gly	Glu
	370					375					380				
Glu	Arg	Trp	Ser	Met	Ile	Asp	Asn	Asn	Thr	Trp	Gly	Met	Ile	Leu	Gly
385				390						395					400
Lys	Ser	Gly	Arg	Leu	Pro	Gly	Pro	Leu	Asp	Pro	Glu	Ile	Val	Ala	Leu
			405						410					415	
Ala	Lys	Glu	Lys	Gly	Tyr	Glu	Phe	Thr	Asp	Glu	Asp	Pro	Gln	Lys	Asn
		420						425					430		
Tyr	Pro	Asp	Gln	Leu	Asp	Glu	Tyr	Arg	Lys	Glu	Met	Gln	Glu	Asn	Gly
	435						440					445			
Trp	Glu	Ser	Gly	Pro	Asp	Asp	Glu	Glu	Leu	Phe	Glu	Leu	Ala	Met	His
	450					455					460				
Asp	Arg	Gln	Tyr	Arg	Asp	Tyr	Lys	Ser	Gly	Val	Ala	Lys	Lys	Arg	Phe
465				470						475					480
Glu	Glu	Asp	Leu	Gln	Arg	Ala	Lys	Asp	Ala	Ala	Leu	Ala	Lys	Gln	Gly
			485						490					495	
Phe	Ser	Glu	Glu	Asp	Val	Lys	Arg	Met	Lys	Arg	Ala	Lys	Ala	Glu	Pro
	500							505					510		
Ile	Thr	Ala	Met	Glu	Lys	Gly	Arg	Ile	Ile	Trp	Glu	Ile	Asp	Val	Glu
	515						520					525			
Ser	Pro	Ser	Met	Pro	Pro	Glu	Val	Gly	His	Lys	Tyr	Glu	Pro	Asp	Asp

530 535 540
 Val Phe Cys Tyr Ile Ala Thr Pro Trp Asn Thr Tyr Asp Arg Val Leu
 545 550 555 560
 Ala Asn Phe Ser Gly Arg Ile Ile Glu Val Cys Ala Lys Gln Gly Ala
 565 570 575
 Leu Val Asn Lys Gly Asp Ala Leu Ala Tyr Val Glu Arg Cys Glu Glu
 580 585 590
 Pro Ala

<210> 6678
 <211> 152
 <212> PRT
 <213> B.fragilis

<400> 6678
 Met Ser Gln Ile Gly Tyr Lys Ser Ser Glu Thr Ser Val Val Tyr Ile
 1 5 10 15
 Ile Thr Lys Thr Met Pro Tyr Phe Asn Gly Gln Leu His Phe Phe Thr
 20 25 30
 Phe Thr Leu His Ile Gln Tyr Gln Ser Leu Lys Leu Leu Asn Met Lys
 35 40 45
 Leu Asp Glu Asn Ile Leu Lys Thr Cys Gln Gly Leu Val Met Asn Cys
 50 55 60
 Asn Cys Lys Val Leu Ile Leu Asn Val Leu Gly Glu His Arg Val Phe
 65 70 75 80
 Leu Val Asn Asp Val His Leu Lys Thr Arg Glu Cys Arg Tyr Asn Glu
 85 90 95
 Val Arg Asp Ala Gln Asp Ile Thr Thr Leu Val Leu Asn Ile Gly His
 100 105 110
 Asn Phe Ala Asn Gly Met Thr Glu Gln Thr Leu Leu Glu Arg Thr Gln
 115 120 125
 Ser Ile His Lys Glu Asp Phe Lys Phe Gly Thr Asp Asn Tyr Leu Trp
 130 135 140
 Ile Thr Lys Val Asp Leu Asn Arg
 145 150

<210> 6679
 <211> 772
 <212> PRT
 <213> B.fragilis

<400> 6679
 Tyr Asn Lys Met Asn Asn Ala Lys Leu Leu His Leu Met Val Tyr Ile
 1 5 10 15
 Leu Thr Ile Ile Leu Gly Gln Ser Cys Thr Glu Val Asp Ile Thr Met
 20 25 30
 Pro Lys Gly Pro Lys Gly Asp Arg Gly Met Ser Ala Tyr Glu Phe Trp
 35 40 45
 Lys Glu Asn Val Glu Asn Gly Val Ile Ser Trp Pro Lys Lys Glu Thr
 50 55 60
 Glu Ile Thr Asp Phe Phe Lys Tyr Leu Lys Gly Lys Asp Gly Leu Asp
 65 70 75 80
 Gly Lys Ser Ala Phe Glu Leu Trp Lys Glu Glu Val Ala Thr Gly Ala
 85 90 95
 Leu Asp Asn Pro His Arg Pro Gly Ser Met Trp Pro Val Ser Gln Asn
 100 105 110
 Asn Leu Arg Asp Phe Trp Tyr Tyr Leu Thr Gly Ala Ser Gly Glu Asn
 115 120 125

Gly	Gln	Thr	Pro	His	Ile	Gly	Asn	Asn	Met	Asn	Trp	Ile	Gly	Asn	
130						135				140					
Lys	Asp	Thr	Gly	Ile	Arg	Ala	Gln	Gly	Arg	Asp	Gly	Gln	Asn	Gly	Glu
145					150					155					160
Asp	Ala	Val	Pro	Pro	Val	Val	Thr	Ile	Gly	Asp	Asn	Gly	Asn	Trp	Leu
				165					170					175	
Ile	Asp	Gly	Val	Asp	Thr	Gly	Lys	Pro	Ser	Arg	Gly	Glu	Glu	Gly	Val
			180					185					190		
Ala	Gly	Thr	Thr	Pro	Thr	Val	Thr	Ile	Gly	Glu	Asn	Gly	Asn	Trp	Val
		195					200					205			
Ile	Asn	Gly	Lys	Asp	Thr	Gly	Lys	Ala	Ala	Ile	Gly	Lys	Asp	Gly	Arg
	210					215					220				
Ser	Pro	Glu	Val	Ile	Ile	Gly	Thr	Asn	Gly	Asn	Trp	Tyr	Ile	Asn	Gly
225					230					235					240
Lys	Asp	Thr	Gly	Ile	Arg	Ala	Tyr	Gly	Lys	Asp	Gly	Ala	Asn	Gly	Lys
				245					250					255	
Asp	Gly	Ile	Asn	Gly	Lys	Asp	Gly	Ala	Asn	Gly	Lys	Asp	Gly	Ala	Asn
			260					265					270		
Gly	Lys	Asp	Gly	Ile	Asn	Gly	Lys	Asp	Gly	Ala	Ala	Gly	Lys	Asp	Gly
		275					280					285			
Ala	Asn	Gly	Lys	Asp	Gly	Ala	Asn	Gly	Lys	Ser	Ala	Tyr	Glu	Leu	Trp
	290					295					300				
Val	Glu	Ser	Val	Glu	Ala	Gly	Cys	Asn	Asn	Thr	Gly	Pro	Lys	Val	Lys
305					310					315					320
Asn	Pro	His	Asn	Pro	Ser	Leu	Asp	Trp	Asp	Cys	Gly	Lys	Thr	Thr	Leu
				325					330					335	
Ser	Asp	Phe	Trp	Glu	Phe	Leu	Arg	Gly	Ala	Asp	Gly	Lys	Asp	Gly	Ala
			340					345					350		
Asp	Gly	Lys	Asp	Gly	Lys	Pro	Gly	Val	Pro	Gly	Lys	Pro	Gly	Ala	Glu
		355					360					365			
Val	Thr	Ile	Ile	Lys	Gly	Val	Pro	Asn	Val	Ile	Ala	Leu	Tyr	Ser	Gln
	370					375					380				
Gln	Glu	Phe	Gly	Glu	Tyr	Val	Arg	Thr	Thr	Asp	Gly	Gly	Val	Ala	Tyr
385					390					395					400
Arg	Val	Tyr	Asp	Glu	Ser	Gly	Asn	Lys	Ala	Pro	Lys	Ala	Val	Val	Lys
				405					410					415	
Gly	Ile	Pro	Gly	Leu	Asp	Pro	Ala	Lys	Thr	Tyr	Thr	Ala	Asn	Glu	Glu
			420					425					430		
Gly	Glu	Phe	Ile	Ile	Pro	Lys	Glu	Asp	Leu	Pro	Gln	Ile	Asp	Asp	Ile
		435					440					445			
Asp	Ala	Arg	Trp	Gly	Lys	Val	Lys	Glu	Val	Thr	Ile	Asn	Lys	Val	Thr
	450					455					460				
Lys	Glu	Ser	Ala	Glu	Asn	Thr	Tyr	Val	Pro	Asn	Arg	Met	Gln	Ile	Arg
465					470					475					480
Met	Ile	Tyr													

595 600 605
 Pro Tyr Gln Ile Pro Pro Thr Leu Lys Thr Leu Ala Leu Thr Lys Ala
 610 615 620
 Ser Ala Glu Ser Gly Asp Asp Val Phe Leu Asn Lys Ala Gln Gly Glu
 625 630 635 640
 Phe Asp Phe Ser Thr Ile Asp Phe Asn Ile Ile Cys Lys His Glu Leu
 645 650 655
 Val Lys Thr Val Lys Pro Asn Gly Ile Asp Tyr Ile Glu Pro Glu Tyr
 660 665 670
 Tyr Ala Pro Glu Glu Ala Lys Glu Leu Leu Leu Cys Tyr Val Lys Phe
 675 680 685
 Thr Tyr Thr Ser Pro Leu Gly Val Gln Thr Ala Thr Ser Glu Leu Asn
 690 695 700
 Met Ser Ser Tyr Lys Lys Pro Glu Tyr Ala Ala Leu Ser Pro Tyr Leu
 705 710 715 720
 Gly Ala Thr Ile Tyr Ser Val Gly Ala Ser Ser Thr Phe Ile Tyr Ser
 725 730 735
 Ser Asn Val Ser Leu Gly Val Leu Lys Lys Lys Ala Asp Asn Gly Thr
 740 745 750
 Tyr Tyr Val Glu Asn Thr Tyr Lys Asp Met Pro Glu Ile Ser Val Thr
 755 760 765
 Tyr Lys Glu Lys
 770

<210> 6680

<211> 182

<212> PRT

<213> B.fragilis

<400> 6680

Thr Ser Pro Ile Cys Phe Thr Ala Val Thr Trp Ser His Thr Val Ala
 1 5 10 15
 Glu Arg Ser Thr Glu Thr Asp Val Ile Pro Val Thr Met His Pro Met
 20 25 30
 Val Phe Thr Tyr Leu Val Arg Tyr Glu Phe Ser His Gly Val Glu Tyr
 35 40 45
 Val Ser Leu Ala Arg Gly Ala Leu Ala Gly Met Ala Gln Ala Val Trp
 50 55 60
 Leu Asn Ser Gly His Thr Ser Asp Glu Ala Ala Thr Val Leu Tyr Asp
 65 70 75 80
 Cys Thr Val Glu Asp Phe Gly Thr Gln Ala Leu Val Arg Ser Phe Gly
 85 90 95
 Ile Pro Asp Phe Pro Asn Glu His Tyr Gly Thr Arg Ala Glu Arg Lys
 100 105 110
 Tyr Gly Leu Asn Leu Glu Val Arg Leu Lys Asn Gly Lys Ile Lys Ser
 115 120 125
 Phe Asp Phe Asp Val Thr Asp Gln Val Val Ala Gln Pro Gln Gly Gly
 130 135 140
 Val Ile Val Val Lys Gly Ile Glu Ile Ser Asp Glu Glu Gly Thr Glu
 145 150 155 160
 Gly Gly Ser Gly Phe Asp Val Asp Val Asp Asp Trp Gly Asp Tyr Glu
 165 170 175
 Asp Ile Glu Leu Pro Leu
 180

<210> 6681

<211> 86

<212> PRT

<213> B.fragilis

<400> 6681

Arg Tyr Glu Ile Phe Ile Ile Val Ser Ile Leu Gln Lys Ala Met Thr
 1 5 10 15
 Ala Tyr Asp Leu Lys Asn Ile Ala Ser Ala Gly Gly Asn Ile Val Val
 20 25 30
 Asn Ala Glu Asp Phe Ser Ala Tyr Asp Leu Lys Asn Ile Ala Glu Asn
 35 40 45
 Gly Val Ala Thr Lys Ala Lys Leu Thr Ile Lys Asn Ala Gly Gly Leu
 50 55 60
 Ser Gly Tyr Asp Cys Lys Asn Ile Ala Ser Ala Asn Pro Gly Asn Val
 65 70 75 80
 Thr Phe Asp Phe Ser Glu
 85

<210> 6682

<211> 234

<212> PRT

<213> B.fragilis

<400> 6682

Thr Leu Trp Ile Ile Lys Gly Ser Ala Leu Ile Leu Glu Glu Ser Pro
 1 5 10 15
 Ile Gln Gln Lys Val Gln Thr Arg His Ser Gly Gln Pro Ile Ser Ser
 20 25 30
 Gly Leu Phe Ile Cys Val Phe Val Gln Ala Phe Gly Asp Ala Phe Glu
 35 40 45
 Phe Thr Gln Val Ala Val His Phe Leu Cys Asn Asn Val Ile Ser His
 50 55 60
 Trp Leu Ser Glu Lys Asn Ser Lys Asn Phe Ala Ile Met Lys Lys Tyr
 65 70 75 80
 Phe Val Leu Ser Val Phe Ile Met Leu Ile Gly Ala Phe Thr Asn Val
 85 90 95
 Gln Gly Gln Asn Ser Ala Thr Pro Asp Lys Gly Val Leu Val His Gly
 100 105 110
 Asn Val Arg Leu Cys Asn Tyr Glu Arg Gly Cys Leu Ile Thr Asp Asn
 115 120 125
 Asp Met Lys His Trp Thr Gln Lys Leu Glu Ile Ser Tyr Asp Gly Ser
 130 135 140
 Asp Lys Thr Tyr Gly Ile Tyr Ile Asn Val Arg Gly Asp Ile Ile Asn
 145 150 155 160
 Leu Gly Val Lys Tyr Lys Ser Ser Gly Thr Glu Ser Tyr Thr Tyr Glu
 165 170 175
 Gly Thr Asp Arg Val Thr Gly Arg Lys Val Val Val Val Thr Lys Gln
 180 185 190
 Lys Leu Ser Trp Tyr Leu Asn Asn Asn Gly Val Asp Ser His Thr Glu
 195 200 205
 Val Glu Ser Pro Lys Gly Ile Ile Val Thr Val Pro Ala Thr Tyr Thr
 210 215 220
 Val Phe Ser Val Val Pro Ile Lys Asn Lys
 225 230

<210> 6683

<211> 282

<212> PRT

<213> B.fragilis

<400> 6683

Asn Asn His Phe Ile Ile Thr Tyr Ile Ile Met Asn Lys Val Phe Leu

1 5 10 15
 Phe Leu Leu Phe Ser Phe Leu Thr Ile Thr Ser Met Ala Gln Glu Lys
 20 25 30
 Ile Lys Gln Thr Ala Gly Arg Asp Gln Leu Gly Asp Phe Ala Pro Lys
 35 40 45
 Phe Ala Glu Leu Asn Asp Asp Val Leu Phe Gly Glu Ile Trp Ser Arg
 50 55 60
 Thr Asp Lys Leu Ser Leu Arg Asp Arg Ser Leu Val Thr Ile Thr Ser
 65 70 75 80
 Leu Ile Ser Gln Gly Ile Thr Asp Asn Ser Leu Thr Phe His Leu Gln
 85 90 95
 Ser Ala Lys Asn Asn Gly Ile Ser Arg Thr Glu Ile Ser Glu Ile Ile
 100 105 110
 Thr His Ile Gly Phe Tyr Ala Gly Trp Pro Lys Ala Trp Ala Ala Phe
 115 120 125
 Arg Leu Ala Lys Glu Val Trp Ala Lys Asp Thr Thr Gly Val Asp Ala
 130 135 140
 Lys Ala Ala Phe Gln Arg Glu Met Ile Phe Pro Ile Gly Glu Pro Asn
 145 150 155 160
 Thr Ala Tyr Ala Gln Tyr Phe Thr Gly Asn Ser Tyr Leu Ala Pro Ile
 165 170 175
 Ser His Glu Gln Val Asn Ile Ser Asn Val Thr Phe Glu Pro Gly Cys
 180 185 190
 Arg Asn Asn Trp His Val His His Ala Lys Lys Gly Gly Gln Met
 195 200 205
 Leu Ile Gly Ile Ala Gly Arg Gly Trp Tyr Gln Glu Gly Lys Pro
 210 215 220
 Ala Val Glu Ile Leu Pro Gly Thr Val Ile His Ile Pro Ala Asn Val
 225 230 235 240
 Lys His Trp His Gly Ala Thr Ala Glu Ser Trp Phe Ala His Leu Ala
 245 250 255
 Phe Glu Ile Pro Gly Glu Asp Ser Ser Asn Glu Trp Leu Glu Pro Val
 260 265 270
 Thr Asn Lys Glu Tyr Asn Arg Leu Pro Gln
 275 280

<210> 6684
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 6684
 Ile Asn Thr Val Pro Ser Ser Leu Leu Thr Leu Thr Ala Arg Lys Asn
 1 5 10 15
 Gly Gln His Asp Thr Glu Cys Lys Lys Thr Cys Arg Thr Ala Glu Arg
 20 25 30
 Phe Leu Glu His Gly Thr Val Tyr Glu Pro Gly Ile Gly His Thr Gly
 35 40 45
 Ala Asp Glu Ser Arg Gln Lys Lys Asn Glu Leu Phe His
 50 55 60

<210> 6685
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 6685
 Tyr Leu Tyr Val Ala Pro Asp His Ile Lys Leu Asn Leu Gln Phe Lys
 1 5 10 15

Asn	Gly	Phe	Tyr	His	Leu	Lys	Lys	Gln	Asp	Asp	Gly	Trp	Leu	Thr	Thr
		20						25					30		
Glu	Ile	Asn	Leu	Val	Pro	Phe	Leu	Ser	Val	Lys	Phe	Leu	Thr	Ala	Leu
		35					40					45			
Leu	Phe	Ile	Gln	Lys	Leu	Phe	Tyr	Phe	Gln	Glu	Leu	Ile	Leu	Ser	Asn
	50					55					60				
Gly	Cys	Lys	Ala	Leu	Lys	Thr	Gln	Ser	Asn						
65					70										

<210> 6686

<211> 636

<212> PRT

<213> B.fragilis

<400> 6686

Thr	Phe	Asn	Val	Ile	Phe	Ser	Met	Lys	Gln	Met	Met	Lys	Lys	Tyr	Leu
1				5					10					15	
Tyr	Met	Ala	Ala	Val	Ala	Val	Val	Gly	Thr	Gly	Phe	Leu	Met	Ser	Ser
			20					25					30		
Cys	Lys	Asp	Glu	Phe	Ala	Gly	Gln	Asn	Thr	Asn	Pro	Ser	Thr	Val	Ser
		35					40					45			
Lys	Pro	Asn	Val	Arg	Tyr	Leu	Phe	Thr	Gln	Cys	Ala	Met	Ser	Phe	Gln
	50					55					60				
Pro	Ala	Asp	Tyr	Leu	Gln	Trp	Phe	Ala	Gly	Phe	Asp	Ala	Met	Ser	Thr
65				70					75						80
Trp	Val	Gln	Ala	Thr	Ala	Ser	Gly	Gly	Gly	Asn	Ser	Ser	Lys	Leu	Asn
				85					90					95	
Met	Val	Thr	Gln	Thr	Gly	Cys	Gly	Tyr	Gln	Val	Asn	Glu	Val	Leu	Arg
			100					105					110		
Tyr	Thr	Asn	Glu	Ile	Lys	His	Gln	Ile	Ser	Leu	Met	Ser	Asp	Asp	Glu
		115					120					125			
Lys	Ala	Lys	Tyr	Glu	Tyr	Ile	Ala	Tyr	Leu	Cys	Asn	Pro	Met	Leu	Val
	130					135					140				
Tyr	Leu	Gly	Leu	Glu	Asp	Ser	Asp	Met	Tyr	Gly	Ser	Arg	Gln	Tyr	Ser
145					150					155					160
Glu	Ala	Glu	Met	Ala	Arg	Tyr	Gly	Gly	Thr	Leu	Thr	Pro	Lys	Tyr	Asp
				165					170					175	
Thr	Gln	Glu	Glu	Leu	Phe	Glu	Leu	Trp	Leu	Lys	Gln	Leu	Asp	Glu	Thr
			180					185					190		
Ile	Asn	Tyr	Leu	Arg	Glu	Asn	Asn	Pro	Gln	Asp	Val	Leu	Gly	Ala	Gln
	195						200					205			
Asp	Phe	Ile	Tyr	Arg	Gly	Lys	Leu	Asp	Lys	Trp	Ala	Lys	Leu	Ala	Asn
	210					215					220				
Ser	Leu	Lys	Leu	Arg	Ile	Ala	Ala	Arg	Leu	Ile	Asn	Lys	Asp	Lys	Ala
225				230						235					240
Arg	Ala	Ile	Ala	Ile	Val	Asn	Glu	Ala	Ala	Gln	Asn	Pro	Ala	Gly	Leu
				245						250				255	
Ile	Leu	Thr	Leu	Asp	Asp	Asp	Phe	Val	Phe	Asn	Lys	Gly	Lys	Arg	Asp
			260					265					270		
Asn	Asn	Trp	Asn	Asn	Asp	Ile	Ser	Val	Gly	Ala	Gly	Thr	Lys	Gln	Leu
		275				280						285			
Ile	Asp	Phe	Met	Val	Ser	Asn	Arg	Asp	Pro	Arg	Leu	Phe	Tyr	Phe	Phe
	290					295					300				
Gln	Lys	Asn	Asp	Tyr	Asn	Ser	Asn	Val	Val	Gln	Gly	Phe	Phe	Asp	Gln
305					310					315					320
Lys	Arg	Ala	Leu	Pro	Ser	Tyr	Val	Glu	Ala	Asn	Val	Asn	Tyr	Thr	Val
				325						330				335	
Asp	Ala	Asp	Gly	Lys	Lys	His	Phe	Glu	Ser	Trp	Lys	Ala	Pro	Gly	Glu
			340					345					350		

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Pro Trp Val Arg Tyr Tyr Gly Val Pro Cys Gln Val Asp Ile Asn Lys
 355 360 365
 Lys Glu Glu Tyr Lys Asp Tyr Phe Asp Pro Asn Asn Glu Leu Phe Tyr
 370 375 380
 Leu Leu Ser Lys Asp Gly Ala Lys Lys Thr Tyr Thr Pro Ile Ala Tyr
 385 390 395 400
 Arg Asn Thr Glu Asn Ile Lys Gly Leu Leu Ile Tyr Thr Phe Pro Asp
 405 410 415
 Val Pro Asp Val Ala Pro Val Gln Asp Lys Glu Glu Tyr Gly Trp Tyr
 420 425 430
 Gly Leu Tyr Phe Ser Ala Gly Glu Thr Asn Leu Leu Leu Ala Glu Phe
 435 440 445
 Lys Leu Leu Gly Ala Asn Leu Pro Met Thr Ala Gln Gln Tyr Leu Ser
 450 455 460
 Ala Gly Val Glu Met Ser Val Arg Gly Tyr Asp Phe Val Ser Ala Lys
 465 470 475 480
 Asn His Ile Pro Tyr Tyr Asp Lys Thr Tyr Thr Gly Asp Val His Asp
 485 490 495
 Lys Thr Ile Ser Leu Lys Glu Gly Met Ile Asp Glu Met Leu Ser His
 500 505 510
 Asp Ala Tyr His Leu Thr Gly Asp Leu Ser Lys Asp Leu Glu Lys Val
 515 520 525
 Tyr Ile Gln Gln Tyr Ile His Tyr Leu Met Leu Pro Met Asp Met Phe
 530 535 540
 Val Thr Ala Arg Arg Ser Gly Val Pro Met Lys Asn Ser Thr Leu Leu
 545 550 555 560
 Pro Tyr Gln Asp Phe Asp Pro Leu Leu Gly Asp Gln Tyr Val Ile Pro
 565 570 575
 Arg Arg Phe Pro Val Ser Lys Pro Leu Asp Ser Asp Leu Leu Arg Asp
 580 585 590
 Ile Thr Ile Ala Ala Tyr Gln Ala Gln Gly Tyr Thr Tyr Glu Gly Glu
 595 600 605
 Met Ser Asn Ser Pro Val Thr Leu Ser Lys Glu Arg Val Trp Tyr Asp
 610 615 620
 Lys Glu Ala Pro Ala Phe Gly Thr Gly Pro Gln Gln
 625 630 635

<210> 6687

<211> 124

<212> PRT

<213> B.fragilis

<400> 6687

Glu Val Ala Val Tyr Asp Asn Leu Pro Val Tyr Lys Ala Ala Tyr Asp
 1 5 10 15
 Leu Leu Arg Ser Val Tyr Glu Lys Thr Gly Lys Ile Pro Arg Asp Val
 20 25 30
 Lys Tyr Thr Leu Val Glu Val Leu Lys Lys Asp Leu Thr Glu Ile Met
 35 40 45
 Val Met Ile Tyr Arg Ala Asn Ala Thr Thr Gly Lys Leu Pro Tyr Ile
 50 55 60
 Glu Arg Ala Arg Asp Leu Val Val Gly Val Lys Val Arg Leu Arg Leu
 65 70 75 80
 Leu Gln Asp Met Arg His Ile Ser Val Lys Gln Tyr Ala Ala Phe Ala
 85 90 95
 Gln Gln Val Glu Leu Leu Ser Lys Gln Leu Ser Ala Trp His Asp Tyr
 100 105 110
 Ala Arg Arg Gln Asp Ala Lys Ser Gln Glu Lys Ile
 115 120

<210> 6688
 <211> 584
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (1), (584)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6688

Xaa	Thr	Leu	Phe	Ile	Ile	Leu	Phe	Ser	Leu	Gly	Tyr	Ser	Gly	Ile	Tyr
1				5					10					15	
Ser	Gln	Glu	Gln	Gln	Val	Lys	Lys	Asp	Ser	Val	Tyr	Gln	Leu	Gln	Glu
			20					25					30		
Ile	Val	Val	Ser	Ser	Gln	Gln	Ile	Leu	Gly	Ser	Lys	Phe	Lys	Ala	Arg
			35				40					45			
Asn	Arg	Thr	Gly	Ser	Ala	Tyr	Tyr	Ile	Ser	Pro	Glu	Glu	Ile	Arg	Arg
			50			55					60				
Leu	Gly	Tyr	Thr	Asp	Ile	Asn	Arg	Met	Leu	Lys	Ala	Val	Pro	Gly	Val
65				70				75						80	
Asn	Met	Tyr	Glu	Glu	Asp	Gly	Phe	Gly	Leu	Arg	Pro	Asn	Ile	Ser	Leu
			85					90					95		
Arg	Gly	Thr	Lys	Ala	Glu	Arg	Ser	Glu	Arg	Ile	Ser	Ile	Met	Glu	Asp
			100					105					110		
Gly	Val	Leu	Ala	Ala	Pro	Ala	Pro	Tyr	Ser	Ala	Pro	Ala	Ala	Tyr	Tyr
			115				120					125			
Phe	Pro	Asn	Val	Ala	Arg	Met	Glu	Ala	Ile	Glu	Val	Leu	Lys	Gly	Ser
			130			135				140					
Ser	Gln	Val	Gln	Tyr	Gly	Pro	Phe	Thr	Thr	Gly	Gly	Ala	Ile	Asn	Leu
145					150					155				160	
Val	Ser	Thr	Pro	Ile	Pro	Asn	Ser	Phe	Ser	Gly	Lys	Ala	Asn	Ile	Ser
				165				170					175		
Tyr	Gly	Ser	Lys	Asn	Thr	Phe	Lys	Ser	His	Thr	Ser	Val	Gly	Ser	Ser
			180				185					190			
Trp	Lys	His	Phe	Gly	Tyr	Met	Val	Glu	Tyr	Leu	Arg	Tyr	Gln	Ser	Asp
			195			200						205			
Gly	Phe	Lys	Lys	Tyr	Glu	Asp	His	Ala	Ala	Lys	Gly	Phe	Lys	Arg	Asn
			210			215					220				
Asp	Ile	Ile	Ala	Lys	Ile	Arg	Val	Lys	Thr	Asp	His	Val	Lys	Gly	Val
225				230						235				240	
Asn	His	Ala	Leu	Glu	Leu	Lys	Phe	Gly	Tyr	Ala	Asp	Glu	Asn	Ser	Asp
			245					250					255		
Glu	Thr	Tyr	Val	Gly	Leu	Ser	Ala	Asp	Asp	Phe	Lys	Lys	Thr	Pro	Phe
			260					265					270		
Leu	Arg	Tyr	Ala	Gly	Ser	Gln	Met	Asp	Lys	Leu	Lys	Thr	Asp	His	Arg
			275				280					285			
Gln	Trp	Val	Ala	Thr	Tyr	Leu	Leu	Thr	Phe	Ser	Asn	Lys	Leu	Lys	Ile
			290			295						300			
Thr	Thr	Asn	Ala	Tyr	Tyr	Asn	Tyr	Phe	His	Arg	Asn	Trp	Tyr	Lys	Leu
305				310						315				320	
Asn	Asp	Val	Arg	Ala	Gly	Ile	Thr	Ser	Lys	Glu	Lys	Arg	Ser	Ile	Ala
			325					330					335		
Asp	Val	Leu	Val	Asp	Pro	Glu	Thr	Asn	Ile	Arg	Tyr	Phe	Asp	Ile	Leu
			340					345					350		
Thr	Gly	Lys	Thr	Asp	Arg	Glu	Gly	Glu	Ala	Leu	Leu	Val	Arg	Ala	Asn
			355			360						365			
Asn	Arg	Thr	Tyr	Arg	Ser	Arg	Gly	Ile	Gln	Thr	Arg	Ala	Glu	Tyr	Arg

370 375 380
 Phe Asn Leu Asn Glu Phe Phe Phe Asp Leu Glu Phe Gly Leu Arg Tyr
 385 390 395 400
 His Ala Asp Glu Glu Asp Arg Phe Gln Trp Asp Asp Ser Tyr Ser Met
 405 410 415
 Lys Asn Lys Lys Met Val Leu Phe Met Glu Gly Ile His Gly Thr Asn
 420 425 430
 Ala Asn Arg Val Thr Ser Ala Asn Ala Leu Ala Gly Tyr Leu Leu Ala
 435 440 445
 Lys Leu Arg Tyr Asp Ala Trp Thr Val Thr Ala Gly Leu Arg Tyr Glu
 450 455 460
 Asp Val Asp Leu Leu Lys Lys Asp Tyr Thr Lys Glu Asp Leu Ala Arg
 465 470 475 480
 Ser Gly Lys Val Arg Ile Glu Thr Pro Asn His Ala Arg Val Leu Ile
 485 490 495
 Pro Gly Val Gly Leu His Tyr Gln Leu Met Pro Ala Ala Ser Val Phe
 500 505 510
 Phe Gly Ile His Lys Gly Phe Ala Pro Pro Ser Ala Glu Leu Tyr Gln
 515 520 525
 Lys Pro Glu Ser Ser Val Asn Met Glu Leu Gly Thr Arg Val Ala Ile
 530 535 540
 Gly Asn Phe Arg Ala Glu Leu Ile Gly Phe Tyr Asn Asn Tyr Ser Asn
 545 550 555 560
 Met Leu Gly Ser Asp Leu Ala Ala Ser Gly Gly Gly Leu His His Gly
 565 570 575
 Ala Ala Arg Ser Arg Ala Val Xaa
 580

<210> 6689
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 6689
 Cys Arg His Ala Cys Pro Ser Gly Arg Gly Gly Pro Gly Asp Gly Val
 1 5 10 15
 Cys Pro Ala Leu Gly Thr Gly Ser Gly Gly Asp Tyr Pro Gly Gly Gly
 20 25 30
 Thr Gly Gly Cys Asp Gly Gly Gly Glu Asp Leu Phe Cys Cys Arg Phe
 35 40 45
 Ser Gly Val Gly Arg Arg Glu Trp Lys Gly Gly Leu Glu
 50 55 60

<210> 6690
 <211> 383
 <212> PRT
 <213> B.fragilis

<400> 6690
 Val Leu Ala Tyr Gln Asp Ile Leu Arg Glu Lys Asp Leu Cys Gly Thr
 1 5 10 15
 Leu Cys Tyr Ser Val Val Lys His Pro Phe Asn His Lys Ile Phe Pro
 20 25 30
 Thr Met Ser Asp Lys Phe Gln Thr Phe Cys Phe Ser His Ser Gly Ser
 35 40 45
 Trp Phe Leu Pro Phe Leu Trp Leu Ser Leu Leu Ala Gly Leu Ser Ala
 50 55 60
 Cys Ser Trp Thr Gly Asp Arg Arg Ser Asp Cys Pro Ser Gly Phe Arg
 65 70 75 80

Ile Arg Leu Gln Pro Ala Leu His Ala Gln Ile Gln Pro Asp Ser Gly
 85 90 95
 Thr Gly Val Ile Thr Asp Glu Ile Asp Thr Leu Ser Leu Tyr Val Phe
 100 105 110
 Asp Ala Gln Gly Gln Phe Val Cys Leu His Thr Glu Asn Arg Gln Ser
 115 120 125
 Leu Thr Glu Asn Asp Tyr Ile Ile Thr Leu Pro Leu Glu Tyr Lys Asp
 130 135 140
 Gly Asp Val Tyr Glu Leu Val Phe Trp Ala Gly Gly Asp Asn Arg His
 145 150 155 160
 Tyr Arg Met Pro Gln Leu Thr Pro Gly Ser Ser Thr Arg Asp Glu Leu
 165 170 175
 Thr Leu Arg Leu Glu Arg Asp Gly Asp Gly Arg Gln Asp Asp Glu Leu
 180 185 190
 Gly His Leu Trp Tyr Gly His Leu Arg Leu Ser Arg Ile Gln Pro Ser
 195 200 205
 Glu Leu Thr Ser Val Ser Val Pro Met Leu Lys Asp Ser Asn Arg Phe
 210 215 220
 Val Ile Thr Leu His Asp Thr Ser Gly Gln Gly Leu Asp Ala Asp Asp
 225 230 235 240
 Tyr Asp Phe Thr Leu Leu Ala Asp Asn Gly Arg Met Asn Ala Asp Asn
 245 250 255
 Glu Val Met Thr Gly Asp Arg Val Thr Tyr Ala Ala Tyr His Thr Glu
 260 265 270
 Ser Ala Ser Glu Thr Glu Pro Ala Ala Thr Arg Thr Gly Glu Val Ser
 275 280 285
 Leu Ala Arg Ala Arg Leu Asn Thr Leu Arg Leu Leu Ala Asp Gln Glu
 290 295 300
 Ala Arg Leu Val Val Thr Asp Arg Val Ser Gly Gln Lys Val Val Asp
 305 310 315 320
 Val Asp Leu Thr Arg Tyr Leu Leu Met Thr Arg Pro Leu Phe Glu Glu
 325 330 335
 Ser Asn Gly Val Glu Leu Ser Asp Gln Asp Tyr Leu Asp Tyr Glu Asp
 340 345 350
 Arg Phe Asn Val Ile Phe Tyr Leu Thr Pro Met Gly Lys Leu Glu Ala
 355 360 365
 Leu Asn Ile Asn Gly Trp Ile Ile Arg Leu Asn Asp Ala Gln Leu
 370 375 380

<210> 6691
 <211> 292
 <212> PRT
 <213> B.fragilis

<400> 6691
 Arg Lys Lys Glu Met Lys Lys Leu Lys Tyr Met Ser Met Met Gly Leu
 1 5 10 15
 Ala Ala Leu Leu Leu Thr Thr Trp Ala Ala Cys Ser Asp Asp Thr Asp
 20 25 30
 Ala Ser Gly Gly Glu Asn Pro Glu Glu Ala Arg Ala Tyr Thr Thr Val
 35 40 45
 Thr Ile Ala Val Pro Asn Gly Val Ala Glu Thr Arg Ala Ser Asp Pro
 50 55 60
 Thr Ala Asp Thr Asp Asp Thr Asn Met Asp Ile Gly Leu Thr Asp Glu
 65 70 75 80
 Tyr Lys Val Thr Lys Ala Asn Leu Tyr Leu Phe Pro Gly Gly Thr Gly
 85 90 95
 Ser Ser Phe Gly Ser Ala Lys Leu Thr Glu Ile Ile Ser Ile Ser Gln
 100 105 110

Phe Thr Gln Thr Thr Thr Thr Thr Thr Asp Gln Lys Thr Ile Val Trp
 115 120 125
 Thr Ser Lys Lys Thr Ala Leu Thr Pro Gly Asp Tyr Arg Ile Tyr Ile
 130 135 140
 Val Val Asn Gly Thr Val Asn Gly Val Gly Asp Ser Asp Lys Gly Thr
 145 150 155 160
 Leu Thr Glu Ala Ala Phe Leu Ala Lys Thr Thr Ala Ala Ala Thr Ser
 165 170 175
 Val Ile Ala Ala Val Pro Ser Asp Gly Leu Val Met Ala Ser Arg Ser
 180 185 190
 Pro Asn Ser Asn Asn Ser Asn Thr Leu Pro Tyr Ile Ala Gln Glu Ile
 195 200 205
 Thr Lys Asp Pro Glu Gln Thr Ile Ala Ala Thr Val Glu Arg Val Met
 210 215 220
 Gly Lys Ile Thr Val Thr Ala Gly Gly Thr Ser Ala Ser Ser Ala Ala
 225 230 235 240
 Thr Val Asn Lys Tyr Thr Ser Phe Ser Thr Thr Val Ala Gln Ile Asn
 245 250 255
 Asn Ile Lys Asp Ile Thr Leu Lys Thr His Tyr Val Val His Ala Gly
 260 265 270
 Lys Glu Gly Tyr Tyr Phe Arg His Val Asp Lys Glu Ser Ser Ala Thr
 275 280 285
 Asn Pro Leu Thr
 290

<210> 6692

<211> 250

<212> PRT

<213> B.fragilis

<400> 6692

Gln Ile Arg Glu Arg Met Ile Lys Leu Ile Leu Pro Pro Pro Val Leu
 1 5 10 15
 Ala Asn Ser Tyr Gly Asn Trp Tyr Leu Gln Gly Ser Ser Ala Phe Gly
 20 25 30
 Leu Ser Ser Phe Gly Thr Phe Ser Gly Thr Tyr Thr Asp Met Pro Gly
 35 40 45
 Tyr Ser Ser Gly Ala Val Glu Thr Lys Val Ala Ala Tyr Cys Tyr Glu
 50 55 60
 Asn Thr Met Leu Lys Asp Lys Gln Lys Asn Gly Tyr Thr Thr Gly Ile
 65 70 75 80
 Val Phe Lys Ala Glu Ile Ala Pro Ser Lys Met Met Lys Lys Arg Ser
 85 90 95
 Ser Gly Gly Gly Val Glu Glu Thr Thr Thr Ile Gly Ser Ile Gly Glu
 100 105 110
 Ile Phe Tyr His Ser Gly Ile Phe Tyr Lys Asp Ile Glu Ala Leu Lys
 115 120 125
 Glu Ala Gly Val Leu Leu Ala Asp Gly Thr Thr Ser Ser Ser Ala Ser
 130 135 140
 Gly Val Pro Ala Asp Leu Lys Lys Asn Asp Val Gln Cys Phe Lys Lys
 145 150 155 160
 Gly Asn Thr Asp Gly Lys Phe Phe Cys Tyr Tyr Pro Tyr Trp Ile Lys
 165 170 175
 His Leu Pro Ser Asp Thr Ala Glu Asp Val Met Glu Phe Gly Ile Val
 180 185 190
 Arg Asn Asn Val Tyr Gln Val Thr Val Ala Ser Ile Gln Gly Val Gly
 195 200 205
 Lys Asp Gly Val Thr Glu Asn Ile Ile Thr Asp Thr Glu Thr Asp Asp
 210 215 220

Pro Thr Thr Val Leu Leu Asn Val Lys Leu Ser Ile Lys Pro Trp Val
 225 230 235 240
 Val Arg Ala Asn Ser Ala Val Leu Gly Arg
 245 250

<210> 6693
 <211> 495
 <212> PRT
 <213> B.fragilis

<400> 6693

Ile Ser Gly Ser Glu Gln Glu Lys Phe Ser Gly Ala Asp Pro Cys Gly
 1 5 10 15
 His Gln Ser Asp Leu Tyr Val Lys Ile Lys Ser Leu Met Lys Glu Lys
 20 25 30
 Ile Arg Ser Thr Arg Leu Arg Met Cys Phe Arg Lys Met Pro Pro Ala
 35 40 45
 Val Cys Phe Leu Thr Leu Phe Ala Leu Cys Phe Gly Ala Leu Ser Val
 50 55 60
 Arg Ala Ala Asp Pro Ser Gly Arg Val Ala Leu Ser Ala Val Arg Met
 65 70 75 80
 Gln Arg Ala Gly Gly Gln Val Tyr Val Ser Phe Ala Val Lys Ile Ala
 85 90 95
 Pro Arg Ala Val Arg Ala Arg His Arg Trp Val Ile Thr Pro Cys Leu
 100 105 110
 Gly Asn Ala Ser Asp Ser Val Leu Leu Gly Pro Phe Val Val Thr Gly
 115 120 125
 Arg Ile Met Ala Arg Glu Glu Asn Gln Arg Arg Leu Leu Ala Gly Leu
 130 135 140
 Pro Asp Arg Asp Val Asn His Arg Trp Thr Ala Arg Asn Gly Asp Thr
 145 150 155 160
 Phe Leu Tyr Thr Asp Thr Leu Arg Tyr Ala Pro Trp Met Glu Asn Gly
 165 170 175
 Leu Asn Leu Arg Leu Asp Ile Asp Arg Glu Gly Cys Cys Arg Val Gln
 180 185 190
 Thr Val Gly Ser Ile Val Ser Ser Gly Ala Phe Pro Val Ala Leu Pro
 195 200 205
 Tyr Arg Pro Ser Val Ser Glu Leu Thr Pro Arg Val Ser Arg Thr Val
 210 215 220
 Ala Glu His Ala Asp Asp Tyr Pro Phe Leu Cys Glu Ala Gly Ser Arg
 225 230 235 240
 Pro Leu His Glu Ser Gly Ile Gly Ile Arg Phe Arg Ala Ala Ser Ala
 245 250 255
 Val Val Asp Thr Leu Tyr Ser Ala Asn Ala Gly Asn Leu Arg Arg Ile
 260 265 270
 Thr Glu Ala Ile Gly Leu Leu Arg Ala Asp Ser Cys Ala Phe Leu Gln
 275 280 285
 Gly Ile Ser Ile Ser Gly Tyr Ala Ser Pro Glu Gly Thr Thr Gly Leu
 290 295 300
 Asn Arg Lys Leu Ser Ala Lys Arg Ala Glu Ala Leu Arg His Ala Leu
 305 310 315 320
 Ser Val Arg Met Asn Leu Pro Val Ser Leu Phe Glu Leu Asn Ala Gly
 325 330 335
 Gly Val Asp Trp Asp Arg Leu Ala Glu Leu Val Asn Gly Ser Asp Met
 340 345 350
 Thr Tyr Lys Glu Glu Val Leu Ala Ile Leu Arg Ser His Pro Glu Glu
 355 360 365
 Glu Arg Asn Asp Arg Leu Lys Ala Leu Ala Gly Gly Arg Pro Tyr Arg
 370 375 380

Ser Val Leu Asp Val Leu Tyr Pro Gln Leu Arg Asp Ala Cys Tyr Ile
 385 390 395 400
 Arg Val Gln Tyr Ala Asn Arg Pro Asp Ser Val Ala Asp Thr Val Asn
 405 410 415
 Arg Ala Ile Glu Ala Ile Arg Gly Arg Lys Tyr Glu Glu Ala Phe Arg
 420 425 430
 Leu Leu Lys Thr Val Glu Ala Asp Glu Arg Ser Trp Asn Val Arg Gly
 435 440 445
 Val Cys His Leu Leu Cys Gly Asp Asp Lys Glu Ala Gly Leu Trp Leu
 450 455 460
 His Arg Ala Val Lys Ala Gly Asn Arg Glu Ala Glu Glu Asn Leu Lys
 465 470 475 480
 Lys Met Asn Ala Glu Arg Arg Ala Ala Thr Ile Gly Ile Thr Gln
 485 490 495

<210> 6694
 <211> 112
 <212> PRT
 <213> B.fragilis

<400> 6694
 Ala Pro Leu Leu Pro Leu Ser Ser His Ser Thr Asp Thr Phe Leu Gly
 1 5 10 15
 Val His Ala Gly Gly Gly Glu Ser Asn Leu Ser Arg Val His Leu Leu
 20 25 30
 Phe Val Ser Arg Trp Val Ser Ser Arg Tyr Glu Gly Trp Ala Leu Met
 35 40 45
 Pro Gly Phe Ser Ser Gly Tyr Ser Trp Val Leu Gly Lys Arg Trp Asn
 50 55 60
 Leu Glu Ala Thr Ile Gly Ala Gly Trp Val His Ala Gln Tyr Lys Arg
 65 70 75 80
 Phe Asn Cys Pro Val Cys Gly Glu Tyr Arg Gly Ala Asn Lys Lys Asn
 85 90 95
 Phe Leu Ala Pro Thr Arg Ala Gly Ile Ser Leu Ile Tyr Met Leu Lys
 100 105 110

<210> 6695
 <211> 344
 <212> PRT
 <213> B.fragilis

<400> 6695
 Arg Thr Ala Ser Pro Phe Ser Pro Ser Gly Thr Ala Ser Val Asn Gly
 1 5 10 15
 Arg Ser Met Lys Ser Ser Glu Asp Ser Lys Arg Ser Val Arg Ser Met
 20 25 30
 Gln Tyr Lys Cys Arg Pro Phe Phe Val Phe Met Gly Lys Thr Glu Glu
 35 40 45
 Phe Cys Cys Pro Glu Ile Gln Thr His Ile Leu His Asp Lys Met Ile
 50 55 60
 Met Lys Lys Glu Lys Thr Tyr Ser Arg Ala Pro Leu Pro Phe Val Gly
 65 70 75 80
 Gln Lys Arg Met Phe Val Ser Glu Phe Lys Lys Ile Leu Lys His Phe
 85 90 95
 Asp Asp Lys Thr Ile Phe Val Asp Leu Phe Gly Gly Ser Gly Leu Leu
 100 105 110
 Ser His Ile Thr Lys Arg Glu Arg Pro Asp Ala Val Val Ile Tyr Asn
 115 120 125
 Asp His Asp Asn Tyr Arg Glu Arg Leu Glu Asn Ile Asp Arg Thr Asn

130	135	140
Thr Leu Leu Arg Asp Leu Arg Lys Ile Val Gly Ile Tyr Pro Arg His		
145	150	155
Gln Lys Ile Thr Gly Lys Met Arg Glu Ala Phe Leu Glu Arg Ile Arg		160
	165	170
Leu Glu Glu Thr Thr Gly Phe Val Asp Tyr Leu Thr Leu Ser Thr Ser		175
	180	185
Leu Leu Phe Ser Gly Lys Tyr Ala Gln Asn Met Glu Glu Leu Glu Gly		190
	195	200
Leu Tyr Phe Tyr Asn Lys Ile Arg Gln Ser Asp Tyr Arg Cys Asp Gly		205
	210	215
Tyr Leu Asp Gly Leu Glu Val Val Cys Tyr Asp Tyr Lys Glu Leu Ala		220
225	230	235
Asp Thr Tyr Gly Val Phe Pro Gly Val Val Phe Leu Val Asp Pro Pro		240
	245	250
Tyr Met Gly Thr Asp Ile Ser Thr Tyr Lys Met Asp Trp Lys Leu Ala		255
	260	265
Asp Tyr Leu Asp Val Leu Leu Val Leu Lys Gly His Pro Phe Val Tyr		270
	275	280
Phe Thr Ser Gly Lys Ser Pro Ile Leu Asp Phe Cys Arg Trp Met Glu		285
	290	295
Glu His Pro Gly Ile Gly Asn Pro Phe Lys Gly Ala Gly Arg Ser Thr		300
305	310	315
Leu Thr Ala Arg Met Asn Tyr Asn Ser Ser Tyr Thr Asp Ile Met Leu		320
	325	330
Tyr Lys Asp Leu Pro Arg Ala Ala		335
	340	

<210> 6696
 <211> 87
 <212> PRT
 <213> B.fragilis

<400> 6696
Ala Arg Gly Thr Thr Tyr Ile Gln Phe Ile Thr Leu Ser Ala His
1 5 10 15
Ser Met Val Arg Ala Thr Thr Val Ala Pro Ser Leu Leu Phe Lys Val
20 25 30
Ile Pro Val Gln Ala Pro Ala Gly Ile Cys Gly Thr Leu His Lys Thr
35 40 45
Asp Ile Asn Asn Ala Asp Asn Phe Val Phe Ile Leu Ser Ile Leu Met
50 55 60
Val Val Tyr Gly Ser Val Thr His Ser Ile Pro Glu Arg Leu Ile Thr
65 70 75 80
Ile Glu Ser Asn Tyr Ser Phe
85

<210> 6697
 <211> 145
 <212> PRT
 <213> B.fragilis

<400> 6697
Asn Leu Lys Thr His Lys Glu Val Thr Ser Asn Lys Ser Lys Thr Leu
1 5 10 15
Asp Phe Val Ile Ser Lys Thr Met Lys Ile Phe Arg Tyr Ile Leu Leu
20 25 30
Ala Ser Leu Thr Cys Thr Leu Phe Ser Cys Gly Pro Asp Glu Leu Ile
35 40 45

Pro Glu Ser Val Pro Pro Val Val Asn Pro Gly Asp Lys Asp Glu Pro
 50 55 60
 Gly Glu Glu Pro Glu Glu Pro Glu Glu Pro Glu Lys Ile Gln Leu Ala
 65 70 75 80
 Ile Thr Ala Ser Leu Gln Asn Met Gln Gln Thr Arg Gly Ile Ile Glu
 85 90 95
 Ala Phe Ala Pro Gly His Glu Met Gly Val Phe Val Gly Thr Ser Gln
 100 105 110
 Thr Asp Glu Ala Ala Gly Ile Lys Asn Ala Ser Tyr Leu Phe Asp Gly
 115 120 125
 Lys Val Trp Asn Ala Gly Gln Asp Val Pro Val Glu Ala Asp Ala Gly
 130 135 140
 Leu
 145

<210> 6698
 <211> 116
 <212> PRT
 <213> B.fragilis

<400> 6698
 His Thr Asp Ala His His Arg Thr Thr Gly Gly Lys Tyr Pro Cys Arg
 1 5 10 15
 Gly Met Arg Phe Tyr Leu Tyr Met Asn Asp Trp Leu Cys Lys Asp Lys
 20 25 30
 Lys Ile Phe Ala Met Thr Leu Phe Glu Ile Leu Asn Phe Asn Arg Glu
 35 40 45
 Leu Leu Glu Arg Leu Thr Arg Met Gly Phe Lys Pro Asp Asp Tyr Lys
 50 55 60
 Tyr Ile Asp Leu Tyr Lys Glu Tyr Glu Gln Met Arg Arg Gln Gly Asp
 65 70 75 80
 Lys Val Thr Tyr Cys Val Ala Val Leu Ser Ile Arg His Gly Val Cys
 85 90 95
 Glu Arg Lys Ile Tyr Glu Ile Val Gly Arg Phe Lys Lys Glu Cys Thr
 100 105 110
 Leu His Ala Val
 115

<210> 6699
 <211> 366
 <212> PRT
 <213> B.fragilis

<400> 6699
 Thr Thr Ile Lys Ile Glu Ser Met Asn Thr Lys Leu Ser Ala Leu Leu
 1 5 10 15
 Met Ser Val Leu Cys Ser Val Pro Gln Ile Pro Ala Gly Ala Cys Thr
 20 25 30
 Gly Ile Thr Leu Lys Ser Lys Asp Gly Ala Thr Val Val Ala Arg Thr
 35 40 45
 Ile Glu Trp Ala Glu Ser Val Met Asn Cys Met Tyr Val Val Val Pro
 50 55 60
 Arg Ala Gln Glu Leu Gln Ser Leu Thr Pro Ser Gly Met Asp Gly Leu
 65 70 75 80
 Lys Phe Arg Ala Lys His Gly Phe Val Gly Leu Ala Val Glu Gln Lys
 85 90 95
 Glu Phe Val Val Glu Gly Met Asn Glu Lys Gly Leu Ser Ala Gly Leu
 100 105 110
 Tyr Tyr Phe Pro Asn Tyr Gly Arg Tyr Pro Val Tyr Asp Ala Ala Gln

115	120	125
Arg Asp Lys Ser Leu Ala	Asp Phe Gln Leu Val	Ser Tyr Val Leu Ala
130	135	140
Glu Cys Ser Thr Val Asp	Glu Val Lys Glu Ala	Leu Ser Gln Val Arg
145	150	155
Val Ile Asn Ile Asp	Pro Arg Ser Ser Thr	Val His Trp Arg Phe Thr
165	170	175
Glu Ala Ser Gly Arg	Gln Val Val Leu Glu	Ile Val Asn Glu Met Met
180	185	190
Asn Phe Tyr Asp	Asn Pro Leu Gly	Val Leu Thr Asn Ser Pro Gly Leu
195	200	205
Glu Trp His Trp Thr	Asn Leu Asn Asn Tyr	Ile Asn Leu Gln Pro Gly
210	215	220
Thr Leu Pro Glu His	Asn Phe Gly Pro	Leu Glu Pro Lys Ser Phe Gly
225	230	235
His Gly Ser Gly Leu	Leu Gly Leu Pro	Gly Asp Phe Thr Pro Pro Ser
245	250	255
Arg Phe Val Arg	Ala Thr Phe Phe	Gln Leu Thr Ala Pro Gln Gln Pro
260	265	270
Asp Ala Lys Gly	Ser Val Phe Gln	Ala Phe His Ile Leu Asn Asn Phe
275	280	285
Asp Ile Pro Thr	Gly Ser Glu Gln	Pro Trp Gly Lys Ala Ser Ala Asn
290	295	300
Val Pro Ser Ala Thr	Gln Phe Thr Val	Ala Cys Asp Ile Arg Asp Gln
305	310	315
Lys Val Tyr Tyr	Arg Thr Met Tyr	Asn Ser Asn Ile Arg Cys Ile Asp
325	330	335
Leu Lys Thr Ile	Asn Phe Asp Asn	Val Lys Tyr Gln Ala Asp Pro Leu
340	345	350
Asp Glu Thr Lys	Glu Gln Pro Val	Glu Met Lys Val Ile Lys
355	360	365

<210> 6700

<211> 62

<212> PRT

<213> B.fragilis

<400> 6700

Lys Val Thr Lys	Leu Asn Gln Ile	Ala Leu Leu Tyr	Ile Pro Thr Leu
1	5	10	15
Cys Gly Leu Tyr	Thr Ser Phe Val	Ala Phe Val Val	Leu Gln His Ser
20	25	30	
Gln Ser Ala Asn	His Arg Thr Val	Tyr Met Ala Asn	Gly Lys Glu Asn
35	40	45	
Val Lys Arg Asn	Arg Met Lys Gly	Ser Asp Lys Thr	Lys Tyr
50	55	60	

<210> 6701

<211> 141

<212> PRT

<213> B.fragilis

<400> 6701

Leu Asn Lys Lys	Lys Leu Ser Phe	Leu Phe Leu Lys	Val Ile Ile Thr
1	5	10	15
Glu Ala Ile Lys	Gln Leu Phe Ser	Ser His Thr Phe	Gln Thr Leu Ser
20	25	30	
Leu Glu Ser Arg	Thr Leu Leu Asp	Glu Tyr Asn Phe	Thr Lys Ser Met
35	40	45	

Ile	Ala	Asn	Leu	Leu	Asp	Lys	Gln	Glu	Lys	Leu	Tyr	Leu	Val	Pro	Ser
50						55					60				
Thr	Lys	Lys	Glu	Asn	Glu	Leu	Leu	Ala	Gly	Ile	Ile	Leu	Asn	Asp	Glu
65						70				75					80
Ile	Ile	Tyr	Leu	Leu	Lys	Phe	Ser	Lys	Ala	Ser	Asp	Asn	Ile	Tyr	Thr
				85					90					95	
Leu	Tyr	Asn	Glu	Thr	Asn	Glu	Pro	Ile	Cys	Asp	Val	Lys	Tyr	Asp	Phe
			100					105					110		
Glu	Lys	Gln	Asn	Ile	Val	Ile	Ile	Ser	Asn	Tyr	Gly	Asn	Asp	Ala	Ile
		115					120					125			
Pro	Pro	Thr	Thr	Gln	Val	Gly	Thr	Val	Leu	Phe	Val	Ile			
	130					135					140				

<210> 6702

<211> 271

<212> PRT

<213> B.fragilis

<400> 6702

Ser	Arg	Arg	Cys	Lys	Arg	Met	Lys	Thr	Ile	Thr	Thr	Ala	Cys	Val	Asn
1				5					10					15	
His	Lys	Gly	Gly	Val	Ala	Lys	Thr	Thr	Ser	Leu	Leu	Asn	Leu	Ala	Ala
			20					25					30		
Gly	Ile	Ala	Arg	Met	Tyr	Lys	Lys	Arg	Val	Cys	Ile	Ile	Asp	Ala	Asp
		35					40					45			
Pro	Gln	Ala	Asn	Thr	Thr	Met	Ala	Ala	Phe	Gly	Glu	Glu	Met	Ala	Ser
		50				55					60				
Leu	Pro	Arg	Glu	Val	Leu	Leu	Glu	Ser	Ala	Leu	Gln	Asp	Cys	Met	Gln
65					70				75						80
Asp	Thr	Pro	Pro	Glu	Leu	Lys	Pro	Gln	Lys	Trp	Leu	Glu	Lys	Val	Asp
				85				90						95	
Ile	Leu	Pro	Ala	Ser	Leu	Asp	Leu	Ala	Ala	Thr	Glu	Val	Ile	Met	Tyr
			100					105					110		
Thr	Thr	Pro	Gly	Arg	Glu	Phe	Leu	Phe	Arg	Glu	Ile	Val	Lys	Gly	Leu
		115					120						125		
Glu	Glu	Lys	Tyr	Asp	His	Ile	Leu	Ile	Asp	Cys	Pro	Pro	Ser	Leu	Gly
	130					135					140				
Ile	Ile	Thr	Gln	Asn	Ala	Leu	Met	Ala	Ser	Asp	Tyr	Val	Ile	Ile	Pro
145				150					155						160
Thr	Asp	Gly	Asn	Tyr	Phe	Ala	Met	Lys	Gly	Ile	Glu	Lys	Ile	His	Tyr
			165						170					175	
Ile	Ile	Gly	Leu	Leu	Lys	Arg	Lys	Leu	Gly	Ala	Glu	Val	Arg	Ile	Leu
		180						185					190		
Gly	Tyr	Phe	Met	Thr	Lys	Tyr	Asn	Ala	Arg	Arg	Lys	Leu	Asp	Met	Asp
		195					200					205			
Ile	Arg	Glu	Ser	Leu	Val	Arg	Ser	Leu	Gly	Asp	Gly	Val	Phe	Glu	Thr
	210					215					220				
Val	Ile	Arg	Ser	Asn	Val	Ala	Leu	Gly	Glu	Ala	Gln	Tyr	Lys	Ala	Gln
225				230					235						240
Ser	Ile	Phe	Asp	Tyr	Ala	Pro	Ser	Ser	Asn	Gly	Ala	Asp	Asp	Tyr	Arg
			245						250					255	
Glu	Leu	Val	Lys	Glu	Phe	Leu	Gly	Arg	Ile	Lys	Lys	Ile	Asn	Lys	
		260						265					270		

<210> 6703

<211> 97

<212> PRT

<213> B.fragilis

<400> 6703

Lys Lys Gly Arg Ile Met Lys Asp Phe Thr Ser Lys Gly Ile Ser Leu
 1 5 10 15
 Glu Asn Met Val Gly Glu Thr Pro Gly Lys Glu Lys Gly Met Thr Gly
 20 25 30
 Lys Thr Ser Pro Lys Thr Asn Gln Thr Val Ala Leu Thr Glu Asp Leu
 35 40 45
 Lys Trp Glu Leu Arg Thr Phe Ala Ser Asp His Arg Cys Arg Gly Val
 50 55 60
 Lys Thr Leu Leu Glu Thr Met Ile Glu Cys Phe Val Arg Glu Asp Gly
 65 70 75 80
 Thr Leu Asp Arg Asp Lys Leu Glu Gly Phe Trp Arg Glu Tyr Val Glu
 85 90 95
 Lys

<210> 6704

<211> 522

<212> PRT

<213> B.fragilis

<400> 6704

Leu Tyr Thr Met Lys Lys Ile Ser Ile Leu Ile Ala Ala Leu Thr Leu
 1 5 10 15
 Ser Ile Ser Leu Lys Pro Leu Ala Ala Gln Asn Lys Lys Val Phe Ile
 20 25 30
 Ile Asp Lys Gln Thr Val Tyr Gln Glu Ile Asp Asn Phe Ser Ala Ser
 35 40 45
 Asp Ala Trp Arg Cys Ala Phe Ile Gly Lys Asn Trp Pro Gln Glu Lys
 50 55 60
 Lys Glu Lys Ile Ala Asp Leu Leu Phe Lys Arg Glu Phe Asp Glu Lys
 65 70 75 80
 Gly Asn Pro Ile Gly Met Ala Leu Thr Asn Trp Arg Val Asn Ile Gly
 85 90 95
 Ala Gly Ser Tyr Glu Asn Arg Glu Ala Lys Glu Val Asp Asn Ser Trp
 100 105 110
 Asn Arg Thr Glu Cys Phe Leu Ser Pro Asp Gly Lys Tyr Asp Phe Thr
 115 120 125
 Lys Gln Ala Gly Gln Gln Trp Phe Met Lys Ala Ala Arg Glu Arg Gly
 130 135 140
 Met Asn Asn Phe Leu Phe Thr Asn Ser Ala Pro Tyr Phe Met Thr
 145 150 155 160
 Arg Ser Ala Ser Thr Val Ser Thr Asp Gln Asp Cys Ile Asn Leu Gln
 165 170 175
 Asn Asp Lys Phe Asp Asp Phe Ala Arg Phe Leu Val Lys Ser Ala Gln
 180 185 190
 His Phe Arg Glu Gln Gly Phe His Val Asn Tyr Ile Ser Pro Asn Asn
 195 200 205
 Glu Pro Asn Gly Gln Trp His Ala Asn Ser Phe Gln Glu Gly Ser Phe
 210 215 220
 Ala Thr Lys Ala Asp Leu Tyr Arg Met Val Glu Glu Leu Asp Lys Ala
 225 230 235 240
 Ile Ser Glu Ala Gln Ile Asp Thr Lys Ile Leu Ile Pro Glu Val Gly
 245 250 255
 Asp Met Lys Tyr Leu Phe Glu Ile Asp Ser Ile Ala Lys Ile Pro Asp
 260 265 270
 Asp Ile Ile His Ser Met Phe Tyr Lys Asp Gly Gln Tyr Ser Val Leu
 275 280 285
 Lys Phe Lys Asn Leu Phe Asn Cys Val Ala Ala His Asp Tyr Trp Ser

290 295 300
 Ala Tyr Pro Ala Thr Leu Leu Val Asp Ile Arg Asn Arg Ile His Lys
 305 310 315 320
 Glu Leu Ser Ala Asn Gly His Asn Thr Lys Phe Trp Ala Ser Glu Tyr
 325 330 335
 Cys Ile Leu Glu Lys Asn Glu Glu Ile Thr Met Pro Ala Ser Pro Glu
 340 345 350
 Arg Ser Ile Asn Leu Gly Leu Tyr Val Ala Arg Ile Ile His Asn Asp
 355 360 365
 Leu Thr Leu Ala Asn Ala Ser Ala Trp Gln Trp Trp Thr Ala Val Ser
 370 375 380
 Leu Gly Glu Asp Val Pro Ile Gln Leu Leu Pro Leu Glu Gly Ser Asn
 385 390 395 400
 Gly Leu Ser Leu Gln Tyr Asp Gly Glu Ile Ser Thr Thr Lys Met Leu
 405 410 415
 Trp Thr Thr Ala Asn Tyr Ser Phe Phe Val Arg Pro Gly Met Lys Arg
 420 425 430
 Ile Ala Val Lys Pro Thr Tyr Lys Val Ser Asp Leu Glu Ala Ala Thr
 435 440 445
 Ser Leu Met Ile Ser Ser Tyr Thr Asp Gly Lys Glu Val Val Thr Val
 450 455 460
 Ala Ile Asn Tyr Ser Lys Glu Asn Gln Val Ile Ser Leu Asn Cys Asp
 465 470 475 480
 His Ala Gln Lys Gly Lys Val Tyr Leu Thr Thr Ile Asp Lys Asn Leu
 485 490 495
 Arg Tyr Met Gly Glu Gln Pro Leu Lys Lys Leu Gln Leu Pro Ala Arg
 500 505 510
 Ser Val Ala Thr Ile Val Val Glu Asp Asn
 515 520

<210> 6705

<211> 73

<212> PRT

<213> B.fragilis

<400> 6705

Ser Val Phe Val Ala Ser Met Lys Arg Gln Gly Val Glu Val His Phe
 1 5 10 15
 Arg His Met Glu Gln Ser Asn Lys Leu Gln Asp Ile Val Phe Thr Met
 20 25 30
 Asp Ser Tyr His Phe Asn Gly Ser Lys Val Gly Arg Arg Phe Ser Tyr
 35 40 45
 Ser Lys Phe Gly Thr Thr Leu Phe Ser Trp Ala Val Pro Pro Leu Phe
 50 55 60
 Ala Ser Gly Ser Leu Cys Cys Arg Ile
 65 70

<210> 6706

<211> 422

<212> PRT

<213> B.fragilis

<400> 6706

Lys Thr Lys Val Arg Phe Leu Arg Ala Trp Arg Tyr Tyr Met Met Val
 1 5 10 15
 Thr Ala Tyr Gly Asp Ile Pro Leu Val Thr Glu Val Val Pro Ser Leu
 20 25 30
 Glu Asp Ala Lys Leu Pro Ala Asn Pro Glu Thr Asp Val Val Glu Phe
 35 40 45

Ile Leu Asp Glu Leu Asn Asp Ile Thr Lys Asp Gly Ala Leu Asp Val
 50 55 60
 Ser Pro Lys Gln Lys Gly Arg Ile Thr Arg Gly Ala Ala Leu Ala Leu
 65 70 75 80
 Lys Val Arg Leu Cys Leu Phe Tyr Lys Lys Tyr Asp Glu Val Ile Asp
 85 90 95
 Ala Ala Asn Glu Ile Asn Ser Leu Gly Val Tyr Asn Leu Tyr Gln Glu
 100 105 110
 Gly Glu Val Pro Tyr Ser Glu Leu Phe Lys Glu Ala Asn Glu Asp Asn
 115 120 125
 Cys Glu Ile Ile Leu Ala Val Lys Lys Val Met Asn Asp Tyr Lys Asn
 130 135 140
 Gln Thr Ile Ile Glu Phe Cys Asn Val Ile Asp Gly Gly Trp Ser Ala
 145 150 155 160
 Phe Val Pro Ile Gln Ser Leu Ile Asp Ala Tyr Glu Met Lys Asp Gly
 165 170 175
 Leu Thr Ile Glu Glu Ala Gln Ala Lys Gly Glu Tyr Asn Pro Glu His
 180 185 190
 Pro Tyr Lys Asp Arg Asp Pro Arg Phe Tyr Ala Thr Ile Leu Tyr Ser
 195 200 205
 Gly Ala Asp Trp Met Asp Asn Lys Gly Arg Lys Arg Ile Tyr Asn Thr
 210 215 220
 Leu Asp Arg Asn Ile Asn Gly Glu Pro Asn Lys Asp His Arg Leu Asp
 225 230 235 240
 Ser Arg Asn Ala Ser Gln Thr Ser Tyr Ser Ile Cys Lys Tyr Met Lys
 245 250 255
 Pro Leu Thr Gln Tyr Ser Asp Ile Asn Asn Thr Gly Leu Asp Met Ile
 260 265 270
 Val Phe Arg Tyr Ala Glu Ile Leu Leu Ser Lys Ala Glu Ala Met Ile
 275 280 285
 Glu Lys Asn Thr Asp Leu Ser Gly Ala Thr Asp Leu Ile Asp Leu Ile
 290 295 300
 Arg Glu Arg Ala Gly Met Pro Lys Val Asp Arg Ala Lys Tyr Asn Thr
 305 310 315 320
 Gln Ala Lys Leu Arg Glu Leu Leu Arg Arg Glu Arg Arg Val Glu Phe
 325 330 335
 Ala Phe Glu Gly Leu Arg Arg Asp Asp Ile Ile Arg Trp Asp Ile Ala
 340 345 350
 Lys Asp Val Leu Asn Gly Pro Ile Tyr Ala Ser Asn Gln Gly Thr Val
 355 360 365
 Asp Met Asp Thr Ser Ile Pro Gln Glu Glu Arg Ala Thr Ile Phe Gln
 370 375 380
 Gly Glu Lys Asn Gln Val Val Leu Glu Ile Arg Lys Phe Arg Asn Arg
 385 390 395 400
 Tyr Met Pro Ile Pro Gln Ala Glu Leu Asp Lys Asn Pro Asn Leu Lys
 405 410 415
 Gln Thr Asn Phe Lys Ile
 420

<210> 6707

<211> 81

<212> PRT

<213> B.fragilis

<400> 6707

Pro Val Leu Ser Leu His Leu Cys Ile Tyr Tyr Ser Phe Ser Tyr Ser
 1 5 10 15
 Lys Tyr His Ser Val Phe Pro Lys Asp Thr Asn His Ile Lys Ile Pro
 20 25 30

Asp Ser Arg His Gly His Arg Gly Gly Ile Asn Lys Trp Thr Tyr Leu
 35 40 45
 Phe Ile Lys Ser Ser Thr Arg Pro Met Ala Tyr Gln Pro Asp Gly Asp
 50 55 60
 Arg Gly Gln Asn Leu Asn Pro Ile Leu Asn Val Gly Ala Ala Ser Thr
 65 70 75 80
 Leu

<210> 6708

<211> 152

<212> PRT

<213> B.fragilis

<400> 6708

Ile Asn Lys Ser Ile Tyr Leu Tyr Leu Pro Gly Val Arg Asp Gly Cys
 1 5 10 15
 Arg Gly Phe Leu Cys Asp Trp Tyr Leu Trp Glu Arg Leu Asn Gly Ile
 20 25 30
 Trp Asn Met Lys Lys Ser Asn Ile Tyr Ile Gly Glu Val Ile Lys Gln
 35 40 45
 Val Ile Ala Glu Lys Gln Val Thr Lys Ala Glu Leu Ala Arg Arg Leu
 50 55 60
 Gly Val Lys Pro Gln Ser Val Asp Tyr Leu Leu Thr Arg Lys Ser Ile
 65 70 75 80
 Asp Thr Asp Thr Leu Tyr Ser Leu Ser Leu Ala Leu Asp Tyr Asp Phe
 85 90 95
 Ala Val Leu Tyr Ser Ile Lys Lys Glu His Ala Leu Ala Thr Asp Glu
 100 105 110
 Glu Ser Pro Phe Lys Val Gly Asn Ala Lys Ile Ser Leu Glu Ile Glu
 115 120 125
 Leu Arg Pro Asp Glu Met Leu Lys Leu Asn Leu Lys Gln Lys Ile Ala
 130 135 140
 Asp Leu Leu Glu Gly Lys Gly Lys
 145 150

<210> 6709

<211> 749

<212> PRT

<213> B.fragilis

<400> 6709

Arg Arg Tyr Leu Pro Pro Ala Ile Asn Phe Val Ser Asn Cys Ile Thr
 1 5 10 15
 Ile Asp Thr Lys Leu Leu Ser Glu Ala Asp Thr Gly Ser Gln Leu His
 20 25 30
 Gly Lys Arg Thr Asn Ile Thr Ala Arg His Pro Met Thr Val Ile Arg
 35 40 45
 Cys Arg Ile Phe Phe Val His Gln Phe Gly Pro Gly Asn Ala Ser Phe
 50 55 60
 Ser Pro Gly Leu Ile Gln Glu Ile Asp Asn Arg Gly Thr Gln Arg Lys
 65 70 75 80
 Met Leu Val His Arg Pro Val Asp Thr Ser Glu Gly Phe Pro Ala Ser
 85 90 95
 Val Glu Ile Val Ser Ile Phe Asn Val Gly Ile Arg Leu Ala Glu Val
 100 105 110
 Ala Glu Ala Gly Pro Asp Ser Glu Ile Ile Arg Asp Val Ile Ala Gly
 115 120 125
 Ile Gln Phe Asp Lys His Phe Arg Asn Leu Arg His Asn Ile Pro Cys

130	135	140
Gly Ile Asp Leu Pro His Arg Thr Val Phe Lys Gly His Thr Arg Phe		
145	150	155
Ile Leu Leu Val Ser Arg Thr Leu Ile Ser Glu Glu Glu Val Glu Val		
	165	170
Glu Ala Leu Lys Arg Leu Asp His Cys Ile Arg Arg Pro Ala Asp Gly		
	180	185
Leu Asp Val Ile Thr Gln Arg Gly Glu Asn Leu Ser Leu Val Ile		
	195	200
Arg Ile Asn Gln Val Gln Cys Arg Val Val Ile Arg Leu Arg Asp Ile		
	210	215
Arg Glu Gln Arg Gly Gln Thr Asp Pro Ile Gly Val Ile Ile Asp Pro		
225	230	235
Gly Thr Ser Gln Gly Asn Arg Asp Phe Ile Gly Ile Gly His Ser Gly		
	245	250
Arg Cys Lys Val Arg Gln Ala Gly Thr Leu Cys Val Val Ser Glu Ile		
	260	265
Gly Gly Lys Thr Lys Phe Thr Gly Gln Leu Ile Ser Ser Gly Gly Ser		
	275	280
Lys Gly His Val His Pro Val Val Val Glu Lys Thr Gly Ser Asp Pro		
	290	295
Asp Ser Phe Ile Gly His Ser Ser Gln Val Ile Ile Arg Lys Thr Ala		
305	310	315
Tyr Gly Ile Pro Phe Gly Ile Val Tyr Ser Arg Ile Phe Thr Phe Gln		
	325	330
Val Leu Pro Phe Gln Thr Gly Ala Ile Ile His Val Pro Leu Gly Arg		
	340	345
Asn Ile Pro Ile Val Ser Gly Ile Asn Ser Gln Phe Val Phe Met Ser		
	355	360
Phe Ile Ile Phe Arg Ser Ile Leu Ile Glu Ile Val Ile Tyr Thr Ile		
	370	375
Cys Ile Pro Phe Thr Tyr Gln Thr Phe Gly Ile Leu Leu Tyr Arg Met		
385	390	395
Ile Val His Gly Ser Ile Arg Ser Ile Ile His Leu Ile Val Pro Phe		
	405	410
Val His Ser Asp Ser Pro Gly Arg Ile Thr Ile Gly Thr Gly Glu Phe		
	420	425
Gly Gly Ser Glu Lys Leu Ile Asp Phe Ser Pro Val Lys Ala Arg His		
	435	440
Ala Ala Leu His Ile Ser Phe Ile Arg Phe Gln Cys Thr Val Tyr Arg		
	450	455
Phe Gln Val Val Thr Gly Arg Gly Ile Phe Leu Phe His Gly His Trp		
465	470	475
Ser Leu Val Asp Ile Arg Ala Gln Gly Met Ile Ile Leu Gln Ile Asp		
	485	490
Leu Pro Val Gln Ala Ile Ile Pro Gly Val Arg Val Glu Gln Gly Gln		
	500	505
Leu Val Ser Phe Ile Gln Ser Gly Ile Ile Lys Ile Gly Leu Leu Gln		
	515	520
Phe Thr Arg Thr His Val Thr Val Gly His Phe Ala Arg Cys Arg Gln		
	530	535
Ile Gly Thr Cys Ser Glu Ala Glu Ser Arg Tyr Phe Phe His Ala Thr		
545	550	555
Val Ala Tyr Ile Asp Glu Arg Gly Gly Ser His Phe Val Ala Trp Pro		
	565	570
Thr Ala Val Ala Val Val Ile Asp Ser Arg Gln Leu Ser Ala Ser Phe		
	580	585
Ile Ile Ile Leu Gly Gln Gly Cys Phe Ile Asp Leu Ser Thr Val Leu		
	595	600
		605

130 135 140
 145 150 155
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395
 405 410 415
 420 425 430
 435 440 445
 450 455 460
 465 470 475
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555
 565 570 575
 580 585 590
 595 600 605

Ile Arg Cys Lys Thr Gln Phe Glu Thr Ala Arg Ile Lys Ile Leu Val
 610 615 620
 Asn Ala Ser Thr Val Glu Pro Ser Phe Pro His Thr Thr Ala Asp Ile
 625 630 635 640
 Ser Ile Glu Leu Leu Leu Ala Lys Val Ile Gly Thr Ile Ile Asp Asp
 645 650 655
 Ser Thr Lys Leu Phe Cys Ser Gln Leu Gly Lys Arg Val Tyr Ser Ile
 660 665 670
 Thr Asp Ile Ala Gly Ser Asn Gly Gly Phe Gly Asp Phe Glu Gln Pro
 675 680 685
 Asp Val Pro Glu Thr Ala Val Ser Thr Pro Val Arg Ile Tyr Ile Met
 690 695 700
 Arg Ile Arg Gly Ile Asp Tyr Gly Glu Ser Val Phe Glu Tyr Ile Tyr
 705 710 715 720
 Val Ser Thr Trp Gln Ala Asp Arg Asp Phe Ala Gly Thr Ile Gly Ala
 725 730 735
 Arg Ser Val Gln His Asn Ile Thr Ile Ala Phe Phe Leu
 740 745

<210> 6710
 <211> 136
 <212> PRT
 <213> B.fragilis

<400> 6710
 Val Lys Thr Glu Tyr Asn Asp Ala Leu Ala Ala Val Ser Gly Asp Asn
 1 5 10 15
 Ala Thr Ala Tyr Ala Asn Leu Leu Thr Ala Met Asp Asn Ala Val Lys
 20 25 30
 Ala Arg Val Glu Thr Leu Ile Ala Tyr Tyr Lys Ala Asp His Asn Tyr
 35 40 45
 Ser Val Gln Asn Thr Leu Ala Tyr Thr Leu Gln Thr Ile Ala Asp Gly
 50 55 60
 Leu Ala Asp Tyr Asp Gln Leu Ile Leu Val Gln Lys Gln Ala Ile Ala
 65 70 75 80
 Ala Ala Asp Glu Asn Ile Ala Asn Ala Ala Ser Val Val Ser Lys Glu
 85 90 95
 Gln Ala Ile Ala Asn Gln Glu Lys Thr Ile Ala Asp Leu Glu Asn Ser
 100 105 110
 Leu Ala Val Asn Glu Pro Ile Tyr Asn Asp Tyr Leu Ala Gln Ile Lys
 115 120 125
 Ala Leu Val Gly Asp Ser Ala Glu
 130 135

<210> 6711
 <211> 261
 <212> PRT
 <213> B.fragilis

<400> 6711
 Lys Lys Tyr Arg Met Lys Ile Lys Arg Leu Leu Val Leu Ala Val Leu
 1 5 10 15
 Pro Met Leu Cys Leu Ala Val Asn Ala Gln Asn Ser Ser Lys Asp Asn
 20 25 30
 Thr Pro Lys Lys Gly Asp Phe Thr Val Ala Ala Thr Val Gly Tyr Asn
 35 40 45
 Ser Tyr Thr Ser Val Thr Ala Pro Ser Gly Leu Leu Thr Asp Tyr Glu
 50 55 60
 Val Arg Ala Leu Ser Thr Asn Trp Ala Asp Lys Lys Leu Met Val Gly

65					70						75				80
Phe	Glu	Gly	Gly	Trp	Phe	Phe	Lys	Asp	Gln	Trp	Lys	Leu	Asn	Leu	Gly
				85					90					95	
Gly	Gly	Val	Ser	Phe	Thr	Asn	Asn	Pro	Gly	Tyr	Pro	Ala	Val	Pro	Gly
			100					105					110		
Thr	Ile	Asp	Asp	Ser	Asn	Lys	Asn	Asn	Ser	Ala	Asp	Glu	Asn	Met	Gly
		115					120					125			
Glu	Ile	Pro	Asn	Tyr	Arg	Ala	Val	Ala	Asp	Ala	Gln	Ser	Phe	Ala	Tyr
		130				135					140				
Asn	Val	Ser	Ala	Gly	Val	Asp	Arg	Tyr	Phe	Asn	Ile	Lys	Arg	Val	Pro
145					150					155					160
Asn	Leu	Met	Trp	Tyr	Thr	Gly	Ile	Arg	Val	Arg	Phe	Ala	Tyr	Gly	Glu
			165						170					175	
Asn	Glu	Met	Lys	Tyr	Asp	Glu	Glu	Thr	Ser	Met	Gly	Lys	Ser	Ile	Ala
			180					185					190		
Glu	Ser	Trp	Asn	Leu	Arg	Gly	Ala	Leu	Thr	Ile	Gly	Val	Asp	Tyr	Phe
		195				200						205			
Val	Phe	Pro	Ala	Leu	Tyr	Ile	Gly	Ala	Gln	Ile	Asp	Pro	Phe	Ala	Tyr
		210				215					220				
Thr	Tyr	Asn	Lys	Thr	Thr	Tyr	Asn	Pro	Gln	Ala	Gly	Leu	Gly	Asp	Leu
225					230					235					240
Ser	Ala	Asp	Ser	His	Asn	Tyr	Ser	Val	Leu	Ala	Ala	Pro	Thr	Phe	Lys
				245					250					255	
Ile	Gly	Phe	Lys	Phe											
			260												

<210> 6712

<211> 265

<212> PRT

<213> B.fragilis

<400> 6712

Lys	Tyr	His	Val	Ile	Met	Lys	Thr	Thr	Phe	Met	Asn	Val	Ser	Arg	Gly
1				5					10					15	
Val	Ile	Gly	Ala	Leu	Ala	Phe	Ser	Leu	Gly	Ile	Ser	Ser	Cys	Gln	Ser
			20					25					30		
Ser	Gln	Ser	Lys	Met	Thr	Phe	Glu	Gln	Glu	Gly	Asp	Ser	Leu	Thr	Val
		35					40					45			
Ile	His	Ile	Thr	Asn	Pro	Thr	Gln	Tyr	Leu	Leu	Leu	Pro	Val	Glu	Glu
	50					55					60				
Lys	Thr	Pro	Glu	Ala	Gln	Val	Cys	Ile	Ala	Ser	Asp	Ser	Val	Pro	Val
65				70					75					80	
Asp	Met	Asp	Val	Arg	Leu	Ser	Arg	Glu	Lys	Val	Asp	Tyr	Phe	Val	Pro
				85					90					95	
Phe	Ala	Leu	Pro	Lys	Gly	Glu	Lys	Glu	Val	Ala	Val	Arg	Ile	Arg	His
			100					105					110		
Leu	Pro	Lys	Glu	Ala	Leu	Cys	Trp	Lys	Glu	Leu	Lys	Leu	Ser	Asp	Thr
		115					120					125			
Phe	Asp	Thr	Thr	Asn	Thr	Asp	Gln	Tyr	Arg	Pro	Leu	Tyr	His	His	Thr
	130					135					140				
Pro	Leu	Tyr	Gly	Trp	Met	Asn	Asp	Ala	Asn	Gly	Leu	Val	Tyr	Lys	Asp
145				150						155					160
Gly	Glu	Tyr	His	Leu	Phe	Tyr	Gln	Tyr	Asn	Pro	Tyr	Gly	Ser	Met	Trp
				165					170					175	
Gly	Asn	Met	His	Trp	Gly	His	Ser	Val	Ser	Lys	Asp	Leu	Val	His	Trp
		180						185					190		
Glu	His	Leu	Glu	Pro	Ala	Leu	Ala	Arg	Asp	Thr	Leu	Gly	His	Ile	Phe
		195					200					205			
Ser	Gly	Ser	Ser	Val	Val	Asp	Asp	Ala	Asn	Thr	Ala	Gly	Tyr	Gly	Ala

210	215	220
Gly Ala Ile Val Ala Phe Tyr Thr Ser Ala Ser Asp Lys Asn Gly Gln		
225	230	235
Ile Gln Cys Met Ala Tyr Ser Thr Asp Asn Gly Arg Thr Phe Thr Lys		
	245	250
Tyr Glu Lys Asn Pro Ser Ser Pro Arg		255
	260	265

<210> 6713

<211> 790

<212> PRT

<213> B.fragilis

<400> 6713

Asn Lys Ser Phe Ser Trp Glu Met Gly Phe Arg Val Pro Leu Arg His		
1	5	10
Gln Asn Asn Leu Asn Gln Leu Lys Asn Leu Ser Thr Met Met Lys Asn		
	20	25
Gln Lys Arg Ala Val Cys Leu Leu Ala Cys Leu Leu Ile Ala Gly Phe		30
	35	40
Thr Ala Ala Gln Glu Lys Lys Glu Ser Ala Gln Thr Ala Ser Gly Ser		45
	50	55
Lys Glu Glu Gly Asn Arg Asn Val Met Leu Asn Ala Ser Ser Ala Asn		60
65	70	75
Gly Pro Arg Glu Ile Ser Ile Gly Leu Pro Gly Gly Asp Val Asn Val		80
	85	90
Leu Glu Asn Gly Leu Pro Val Val Tyr Thr Ser Asn Pro His Asn Val		95
	100	105
Asn Thr His Trp Arg Gly Asp Ser Ser Leu Gly His Val Gly Leu Leu		110
	115	120
Lys Ile Ser Glu Thr Ala Ile Thr Thr Gly Asn Ile Gly Tyr Ala Val		125
	130	135
Asn Ser Phe Thr Gln Leu Gly Thr Glu Lys Phe Arg Gly Ile Val Asn		140
145	150	155
Tyr Ser Thr Asn His Phe Gly Lys Gln Gln Phe Asp Ala Asn Ile Ser		160
	165	170
Gly Gly Met Gly Lys Gly Trp Phe Tyr Ser Gly Ser Val Tyr Gln Asn		175
	180	185
Phe Asp Pro Gly Ser Phe Lys Leu Arg Phe Thr Ser Asn Gln Asp Arg		190
	195	200
Thr Gln Ile Tyr Lys Ala Ala Leu Thr Lys Asn Tyr Asn Glu Gly Arg		205
	210	215
Gly Gln Leu Ser Ala Ile Tyr His Tyr Ser Asn Ser Arg Trp Pro Ser		220
225	230	235
Asn Glu Val Thr Ser Ala Pro Phe Ile Tyr Val Gly Asp Gly Ser Val		240
	245	250
Lys Glu Ile Pro Gly Phe Ser Leu Gly Thr Ser Ser Tyr Leu Pro Thr		255
	260	265
Thr Gly Glu Met Ala Tyr Arg Asp Met Arg Thr Gly Glu Leu Lys Glu		270
	275	280
Thr Asn Leu Tyr Asp Ala Thr Leu Asn Lys Gly Asn Gln Leu Thr Leu		285
	290	295
Leu Asn Thr Tyr Thr Trp Asp Asn Gly Leu Asn Trp Lys Ile Asn Leu		300
305	310	315
Lys Tyr Asp His Ala Leu Gly Ser Tyr Val Tyr Gln Thr Pro Met Ala		320
	325	330
Met Glu Gln Lys Asp Ala Ser Ala Gly Tyr Tyr Leu Lys Ala Val Asp		335
	340	345
Gly Thr Leu Lys Pro Tyr Glu Gly Tyr Val Gln Ser Arg Met Ser Cys		350

355	360	365
Leu Asn Arg Gly Lys Ile Asp	Glu Phe Phe Ala Thr Ser	Glu Leu Ser
370	375	380
Arg Ser Tyr Arg Asn Thr Thr	Trp Arg Ile Gly Val Asn	Glu Trp His
385	390	395
Tyr Lys Val Asp Tyr Ala Ser	Asn Thr Thr Met Tyr Asp	His Thr Val
405	410	415
Glu Glu Tyr Pro Glu Arg Leu	Val Arg Glu Gly Asn Thr	Asp Gly Val
420	425	430
Tyr Tyr Asp Phe Asn Lys Asn	Ala Ser Glu Tyr Tyr Lys	Gly His Glu
435	440	445
Asn Lys Leu Ala Val Tyr Ala	Thr His Asp Trp Asp Ile	Ser Pro Lys
450	455	460
Trp Asn Val Tyr Tyr Gly Ala	Arg Leu Glu Trp Gln His	Leu Glu Gly
465	470	475
Glu Asn Ala Ala Val Tyr Asp	Ala Glu Gly Asn Ala Val	Gly Arg Phe
485	490	495
Pro Asp Tyr Tyr Leu Gly Ala	Val Ser Asp Lys Gly Val	Arg Ile Thr
500	505	510
Pro Arg Leu Phe Asp Tyr Asp	Trp Met Asn Met Ala Phe	Thr Ala Ala
515	520	525
Ala Thr Tyr Lys Leu Thr Arg	Glu Phe Gly Phe Thr Ala	Asp Phe Thr
530	535	540
Tyr Asn Thr Gln Arg Pro Gly	Leu Ser Asn Phe Ala Pro	Ala Thr Met
545	550	555
Pro Asn Thr Asp Lys Ile Ser	Val Pro Leu Gly Arg Ala	Gly Ile Tyr
565	570	575
Tyr Asn Thr Asp Trp Ile Ser	Leu Thr Ser Leu Phe Ser	Tyr Ile Ser
580	585	590
Lys Thr Asn Asn Asn Ser Thr	Leu Asn Leu Ile Asn Pro	Asn Asp Gln
595	600	605
Thr Glu Ile Leu Ala Ala Pro	Leu Ser Tyr Asp Ile Gln	Thr Ile Gly
610	615	620
Trp Thr Thr Asp Ala Val Ile	Lys Pro Phe Lys Gly Phe	Asn Phe His
625	630	635
Phe Leu Phe Thr Tyr Gln Ser	Pro Thr Tyr Lys Lys Tyr	Glu Thr Ser
645	650	655
Val Thr Phe Lys Asp Gly Thr	Val Gly Glu Ile Asp Ala	Thr Gly Asn
660	665	670
Ile Val Thr Glu Ile Pro Lys	Val Leu Val Glu Leu Asp	Pro Ser Tyr
675	680	685
Asn Ile Thr Asn Asp Leu Arg	Val Trp Ala Ser Phe Arg	Tyr Phe Ser
690	695	700
Lys Thr Tyr Ala Asn Ile Lys	Asn Ala Tyr Tyr Phe Asn	Gly Arg Trp
705	710	715
Glu Thr Phe Gly Gly Ile Asn	Trp Thr Val Asn Lys His	Leu Ala Leu
725	730	735
Ser Ala Thr Val Ile Asn Phe	Leu Asn Gln Thr Gly Ala	Lys Gly Ser
740	745	750
Ile Ala Gly Thr Glu Leu Val	Asp Lys Lys Asp Ala Ala	Ser Tyr Asn
755	760	765
Gly His Trp Met Ala Gly Ser	Tyr Ile Arg Pro Phe Thr	Val Glu Leu
770	775	780
Ala Ala Ser Ile Arg Phe		
785	790	

<210> 6714

<211> 127

<212> PRT

<400> 6714

<210> 6715

$\langle 211 \rangle$ 400

<212> PRT

<213> B. fragilis

<400> 6715

[illegible]

	260		265		270
Leu Thr Ile	Leu Asp Trp Ser	Trp Glu Trp Gly Trp	Asp Lys Glu Tyr		
	275		280		285
Gly Gly Ile	Ile Asn Phe Arg	Asp Cys Arg Asn Leu	Pro Ser Gln Asp		
	290		295		300
Tyr Ala His	Asp Met Lys Phe Trp	Trp Pro Gln Thr	Glu Ala Ile Ile		
	305		310		315
Ala Thr Leu	Tyr Ala Tyr Gln	Ala Thr Lys Asn Glu	Lys Tyr Leu Ala		
	325		330		335
Met His Lys	Gln Ile Ser Asp Trp	Thr Tyr Ala His	Phe Pro Asp Ala		
	340		345		350
Glu Phe Gly	Glu Trp Tyr Gly Tyr	Leu His Arg Asp	Gly Thr Ile Ser		
	355		360		365
Gln Pro Ala	Lys Gly Asn Leu Phe	Lys Gly Pro Phe	His Ile Pro Arg		
	370		375		380
Met Met Thr	Lys Gly Tyr Ala Leu	Cys Gln Glu Leu	Leu Ser Glu Lys		
	385		390		395
					400

<210> 6716

<211> 73

<212> PRT

<213> B.fragilis

<400> 6716

Arg Pro Arg	Glu Asn Asn Arg	Ser Met Gly Asn Gly	Ala Met Thr Pro
1	5	10	15
Ser Phe Leu	Leu Lys Val Gly	Arg Ile Glu Ile	Ser Gly Lys Gly Ile
	20	25	30
Val Lys Lys	Ser Pro Trp Gly	Cys Cys Gly Ser	Ile Leu Ser Asn Met
	35	40	45
Tyr Gln Ile	Arg Asp Phe Asn Gly	Ala Leu Leu Thr	Met Val Val Phe
	50	55	60
Leu Glu Thr	Val Asp Gly Arg	Tyr Ser	
65	70		

<210> 6717

<211> 417

<212> PRT

<213> B.fragilis

<400> 6717

Pro Leu Ile	Phe Ile Met Lys	Asn Ser Lys Ile	Tyr Pro Trp Ile	Val
1	5	10	15	
Val Ala Leu	Leu Trp Gly Val	Ala Leu Leu Asn	Tyr Met Asp Arg	Gln
	20	25	30	
Met Leu Ser	Thr Met Lys Asp	Ala Met Gln Val	Asp Ile Val Glu	Leu
	35	40	45	
Gln Ser Ala	Thr Asn Phe Gly	Arg Leu Met Ala	Val Phe Leu Trp	Ile
	50	55	60	
Tyr Gly Leu	Met Ser Pro Ile	Ser Gly Met Ile	Ala Asp Arg Leu	Asn
65	70	75	80	
Arg Lys Trp	Leu Ile Val Gly	Ser Leu Phe Val	Trp Ser Phe Val	Thr
	85	90	95	
Tyr Leu Met	Gly Ile Ala Glu	Thr Phe Asn Gln	Val Phe Trp Leu	Arg
	100	105	110	
Ala Leu Met	Gly Val Ser Glu	Ala Leu Tyr Ile	Pro Ala Gly Leu	Ser
	115	120	125	
Leu Ile Ala	Asp Tyr His Thr	Glu Lys Ser Arg	Ser Leu Ala Val	Gly
	130	135	140	

Ile His Met Thr Gly Leu Tyr Thr Gly Gln Ala Ile Gly Gly Phe Gly
 145 150 155 160
 Ala Thr Val Ala Ala Phe Ser Trp His Thr Thr Phe His Trp Phe
 165 170 175
 Gly Ile Ile Gly Ile Ala Tyr Ala Leu Val Leu Val Leu Phe Leu Lys
 180 185 190
 Asp Lys Lys Glu His Val Lys Thr Glu Arg Leu Lys Pro Ser Ser Lys
 195 200 205
 Asn Gly Glu Lys Ala Gly Leu Phe Lys Gly Leu Ser Leu Leu Phe Ser
 210 215 220
 Asn Ile Ala Phe Trp Val Ile Leu Leu Tyr Phe Ala Ala Pro Ser Leu
 225 230 235 240
 Pro Gly Trp Ala Thr Lys Asn Trp Leu Pro Thr Leu Phe Ala Glu Asn
 245 250 255
 Leu Asp Ile Pro Met Ser Gln Ala Gly Pro Met Ser Thr Ile Thr Ile
 260 265 270
 Ala Leu Ser Ser Phe Ile Gly Val Ile Leu Gly Gly Thr Leu Ser Asp
 275 280 285
 Lys Trp Val Gln Lys Asn Ile Arg Gly Arg Val Tyr Thr Gly Ala Ile
 290 295 300
 Gly Leu Gly Leu Thr Ile Pro Ser Leu Leu Leu Gly Phe Gly His
 305 310 315 320
 Ser Phe Val Ala Val Gly Ala Gly Leu Leu Phe Gly Ile Gly Tyr
 325 330 335
 Gly Ile Phe Asp Ala Asn Asn Met Pro Ile Leu Cys Gln Phe Val Ser
 340 345 350
 Ser Lys Tyr Arg Ala Thr Ala Tyr Gly Ile Met Asn Met Thr Gly Val
 355 360 365
 Phe Ala Gly Ala Phe Ile Thr Asp Leu Leu Gly Lys Trp Thr Asp Gly
 370 375 380
 Gly Asn Leu Gly Leu Gly Phe Ala Met Leu Ala Ile Ile Val Phe Ile
 385 390 395 400
 Ala Leu Ala Val Gln Leu Tyr Phe Leu Arg Pro Lys Thr Asp Asn Met
 405 410 415
 Glu

<210> 6718

<211> 149

<212> PRT

<213> B.fragilis

<400> 6718

Thr Val Val Ile Pro Ser Phe Ala Glu Ile Lys Tyr Thr Phe Glu Ser
 1 5 10 15
 Met Tyr Glu Tyr Asn Gln Cys Arg Met Tyr Lys Gly Gly Lys Phe Asp
 20 25 30
 Met Leu His Gly Gln Asp Lys Thr Ile Leu Pro Cys Leu Ala Met Gly
 35 40 45
 Gly Pro Gln Gly Gly Ile Gly Gly Thr Ala Asn Tyr Asn Gly Val Asn
 50 55 60
 Leu Val Gly Ile Ile Glu Ala Trp Lys Ala Gly Asp Leu Glu Lys Ala
 65 70 75 80
 Arg Glu Leu Gln Asn Phe Ser Gln Glu Val Ile Asn Val Ile Cys His
 85 90 95
 Phe Arg Glu Asn Ile Val Gly Gly Lys Arg Ile Met Lys Leu Ile Gly
 100 105 110
 Leu Asp Leu Gly Lys Asn Arg Thr Pro Phe Gln Asn Met Thr Asp Asp
 115 120 125

Glu Glu Val Arg Met Lys Pro Glu Pro Gln Ala Ile His Phe Phe Asp
 130 135 140
 Arg Cys Asn Lys Phe
 145

<210> 6719
 <211> 150
 <212> PRT
 <213> B.fragilis

<400> 6719
 Lys Glu Met Ile Val Ser Asn Leu Gln Asn Ser Gln Arg Val Glu Gly
 1 5 10 15
 Leu His Pro Leu Phe Lys Thr Leu Phe Asp Tyr Val Lys Thr His Asp
 20 25 30
 Leu Phe His Ala Glu Leu Gly Arg Ile Glu Ile Asp Gly Asp Asn Leu
 35 40 45
 Phe Ile Asn Asn Val Asn Pro Glu Cys Val Ala Arg Asp Lys Gln Val
 50 55 60
 Leu Glu Leu His Arg Asp Tyr Ile Asp Val His Ile Leu Leu Glu Gly
 65 70 75 80
 Thr Glu Thr Ile Gly Trp Lys Ala Ile Glu Asp Leu Lys Asp Glu Val
 85 90 95
 Lys Pro Tyr Glu Ala Asn Gly Asp Cys Ala Leu Tyr Ser Asp Ala Pro
 100 105 110
 Thr Thr Phe Val Asp Leu Leu Pro Gly Gln Phe Met Ile Val Tyr Pro
 115 120 125
 Glu Asp Pro His Ala Pro Leu Ile Gly Gln Gly Lys Ile Arg Lys Leu
 130 135 140
 Ile Ala Lys Val Lys Leu
 145 150

<210> 6720
 <211> 698
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (668)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 6720
 Thr Ser Leu Leu Leu Thr Gln Lys Ala Ile Leu Met Lys Lys Thr Ile
 1 5 10 15
 Phe Leu Ile Leu Cys Ile Leu Cys Ser Leu Gly Ala Met Ala Gln Lys
 20 25 30
 Lys Ser Ile Thr Gly Val Val Thr Asp Ala Ser Gly Glu Ser Val Ile
 35 40 45
 Gly Ala Ser Val Val Glu Val Gly Thr Thr Asn Gly Val Ile Thr Asp
 50 55 60
 Ile Asp Gly Lys Phe Thr Leu Ser Val Asp Pro Asn Gly Lys Ile Arg
 65 70 75 80
 Val Ser Tyr Ile Gly Tyr Gln Pro Gln Val Leu Asp Val Lys Gly Lys
 85 90 95
 Asn Ser Phe Asn Ile Lys Leu Lys Glu Asp Ser Glu Met Leu Glu Glu
 100 105 110
 Val Val Val Thr Gly Tyr Gly Gly Lys Gln Leu Arg Thr Lys Val Thr
 115 120 125

Asn	Ser	Ile	Ala	Lys	Val	Lys	Asp	Glu	Ala	Leu	Lys	Val	Gly	Leu	Phe
130						135					140				
Ser	Asn	Pro	Ala	Gln	Ala	Leu	Ser	Gly	Ala	Val	Ala	Gly	Leu	Lys	Val
145					150					155					160
Thr	Gln	Ala	Ser	Gly	Ser	Pro	Gly	Ala	Ala	Pro	Lys	Val	Thr	Leu	Arg
				165					170						175
Gly	Gly	Thr	Asn	Phe	Asp	Gly	Ser	Gly	Asp	Pro	Leu	Val	Ile	Val	Asp
			180					185					190		
Gly	Gln	Leu	Arg	Asp	Gly	Met	Gln	Asp	Ile	Asn	Pro	Glu	Asp	Ile	Glu
		195					200					205			
Ser	Met	Glu	Val	Leu	Lys	Asp	Ala	Gly	Ala	Thr	Ala	Ile	Tyr	Gly	Ala
	210					215					220				
Arg	Ala	Ser	Asn	Gly	Val	Ile	Leu	Ile	Thr	Thr	Lys	Thr	Gly	Lys	Glu
225					230					235					240
Gly	Arg	Arg	Glu	Ile	Asn	Phe	Lys	Ala	Lys	Met	Gly	Leu	Ser	Tyr	Val
				245					250						255
Asn	Asn	Pro	Tyr	Asp	Phe	Leu	Gly	Ala	Lys	Asp	Tyr	Ile	Asn	Val	Leu
		260						265						270	
Arg	Thr	Gly	Tyr	Ser	Lys	Ser	Gly	Phe	Thr	Thr	Ser	Asp	Gly	Glu	Tyr
	275						280					285			
Val	Ser	Ile	Ala	Pro	Leu	Gly	Asn	Leu	Thr	Ser	Ala	Ser	Pro	Phe	Gly
	290					295					300				
Thr	Gly	Asn	Thr	Leu	Asn	Asp	Lys	Thr	Ile	Trp	Asn	Ile	Met	Asn	Lys
305					310					315					320
Thr	Ala	Asp	Asn	Ala	Tyr	Leu	Leu	Gln	Lys	Gly	Trp	Gln	Glu	Met	Pro
				325					330						335
Asp	Pro	Leu	Asp	Pro	Ser	Lys	Thr	Ile	Leu	Tyr	Lys	Asp	Thr	Asn	Pro
			340					345					350		
Ala	Asp	Tyr	Asn	Leu	Asn	Asn	Pro	Ala	Ile	Ser	Gln	Asp	Tyr	Asn	Ile
		355					360					365			
Asn	Met	Ser	Gly	Gly	Asn	Asp	Lys	Gly	Thr	Tyr	Tyr	Ala	Gly	Leu	Gly
	370					375					380				
Tyr	Asn	Arg	Gln	Glu	Gly	Leu	Pro	Ile	Lys	Thr	Phe	Tyr	Glu	Arg	Tyr
385					390					395					400
Ser	Phe	Val	Leu	Asn	Ala	Ser	Tyr	Lys	Ile	Thr	Asp	Trp	Leu	Thr	Ser
				405					410						415
Ser	Ser	Asn	Phe	Asn	Tyr	Asn	Arg	Ala	Asn	Trp	Lys	Asn	Met	Pro	Gly
		420						425					430		
Ser	Gln	Thr	Ser	Glu	Gly	Asn	Tyr	Phe	Gly	Arg	Ile	Met	Ser	Thr	Pro
		435					440					445			
Pro	Thr	Val	Arg	Phe	Gln	Asp	Glu	Asp	Gly	Asn	Pro	Thr	Leu	Gly	Pro
	450					455					460				
Val	Ala	Gly	Asp	Gly	Asn	Gln	Asn	Tyr	Gln	Pro	Asp	Lys	Trp	Trp	Asn
465					470					475					480
Phe	Asn	Gln	Ser	Asp	Lys	Phe	Thr	Met	Val	Gln	Ala	Phe	Gln	Ile	Asp
				485					490						495
Ile	Leu	Lys	Asn	Leu	Ser	Val	Lys	Gly	Thr	Ala	Asn	Trp	Tyr	Tyr	Ser
			500					505					510		
Glu	Ser	Leu	Ala	Glu	Ser	Phe	Thr	Arg	Asp	Tyr	Glu	Asn	Thr	Pro	Gly
	515						520					525			
Gln	Phe	Val	Arg	Thr	Arg	Ser	Ser	Ser	Ala	Ser	Phe	Ser	Arg	Asp	Phe
	530					535					540				
Ser	Gln	Thr	Tyr	Asn	Val	Val	Leu	Asn	Tyr	Asn	Gln	Thr	Phe	Ala	Lys
545					550					555					560
Asp	His	Asn	Val	Ala	Val	Met	Leu	Gly	Met	Glu	Tyr	Phe	Asp	Arg	Tyr
				565					570						575
Ser	Arg	Ser	Phe	Ser	Ala	Ser	Gly	Ser	Gly	Ala	Pro	Thr	Asp	Asp	Phe
			580					585					590		
Ala	Asp	Leu	Ser	Leu	Thr	Asp	Asn	Gly	Glu	Gly	Lys	Arg	Ser	Ile	Asp

595 600 605
 Ser Gly His Ser Asp Tyr Arg Ile Leu Ser Tyr Phe Gly Arg Leu Asn
 610 615 620
 Tyr Asp Tyr Lys Gly Arg Tyr Leu Leu Ser Ala Val Phe Arg Gln Asp
 625 630 635 640
 Gly Tyr Ser Ser Leu Leu Gly Asp Asn Arg Trp Gly Phe Phe Pro Gly
 645 650 655
 Val Ser Ala Gly Trp Ile Phe Gly Gln Glu Asn Xaa Val Lys Asn Ala
 660 665 670
 Leu Pro Phe Leu Ser Phe Gly Lys Leu Arg Ala Ser Tyr Gly Val Asn
 675 680 685
 Gly Asn Ser Thr Gly Ile Gly Ala Ser Ser
 690 695

<210> 6721
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 6721
 Ser Leu Arg Ser Ile Gly Leu Lys Pro Arg Pro Leu Ser Phe Glu Thr
 1 5 10 15
 Asn Gly Thr Leu Val Leu Lys Val Phe Ser Arg Trp Tyr Asn Thr Ile
 20 25 30
 Tyr Gln His Ile Val Ser Glu Thr Phe Ala Lys Ala Gly Ser Ser Val
 35 40 45
 Arg Ile Leu Ile Thr Asp Lys Lys Asn Tyr Lys Pro Thr Ser Glu Arg
 50 55 60
 Cys Val Glu Thr Leu Phe Thr Thr Glu
 65 70

<210> 6722
 <211> 329
 <212> PRT
 <213> B.fragilis

<400> 6722
 Arg Lys Asn Lys Lys Met Gly Leu Phe Ile Lys Lys Pro Phe Glu Ala
 1 5 10 15
 Leu Leu Ala Glu Ala Asn Ala Ser Gly Ser Lys Ser Leu Lys Arg Val
 20 25 30
 Leu Gly Pro Trp Ser Leu Val Ala Leu Gly Val Gly Val Ile Ile Gly
 35 40 45
 Ala Gly Leu Phe Ser Ile Thr Gly Thr Val Ala Ala Gly Tyr Thr Gly
 50 55 60
 Pro Ala Ile Thr Leu Ser Phe Ala Ile Ala Ala Leu Gly Cys Cys Phe
 65 70 75 80
 Ala Gly Leu Cys Tyr Ala Glu Phe Ala Ser Met Ile Pro Val Ala Gly
 85 90 95
 Ser Ala Tyr Thr Tyr Ser Tyr Ala Thr Met Gly Glu Leu Ile Ala Trp
 100 105 110
 Ile Ile Gly Trp Asp Leu Val Leu Glu Tyr Thr Val Ala Ala Thr Thr
 115 120 125
 Val Ser Ile Ser Trp Ser Arg Tyr Leu Val Val Phe Leu Glu Gly Leu
 130 135 140
 Asp Ile His Leu Pro Gln Ala Leu Thr Ala Cys Pro Trp Asp Gly Gly
 145 150 155 160
 Ile Val Asn Ile Pro Ala Phe Leu Ile Val Val Leu Met Ser Ile Phe
 165 170 175

Leu Ile Arg Gly Thr Glu Gly Ser Ser Ile Phe Asn Gly Ile Ile Val
 180 185 190
 Phe Leu Lys Val Ser Val Ile Ala Ile Phe Val Val Leu Arg Trp Lys
 195 200 205
 Tyr Ile Asn Ala Asp Asn Tyr Thr Pro Tyr Ile Pro Ala Asn Thr Gly
 210 215 220
 Thr Leu Gly Glu Tyr Gly Leu Ser Gly Val Leu Arg Gly Ala Ala Ile
 225 230 235 240
 Val Phe Phe Ala Phe Leu Gly Phe Asp Ala Val Ser Thr Ala Ala Gln
 245 250 255
 Glu Thr Lys Asn Ser Glu Thr Glu Tyr Ala Asp Arg Tyr Ser Gly Ile
 260 265 270
 Thr Leu Gly Met Tyr Arg Thr Leu Tyr Ala Cys Cys Pro Arg Asn Asp
 275 280 285
 Arg Ser Ser Pro Leu Ile Pro Asn Phe Asn Gly Gln Lys Gly Ile Ala
 290 295 300
 Pro Val Ala Ile Ala Ile Arg Thr His Gly Thr Cys Arg Cys Asn Arg
 305 310 315 320
 Ala Ser Phe Thr Arg Ile Ile Pro Trp
 325

<210> 6723
 <211> 116
 <212> PRT
 <213> B.fragilis

<400> 6723
 Lys Trp Ile Glu Glu Ala Arg Ala Leu Gly Asp Thr Pro Glu Glu Lys
 1 5 10 15
 Glu Leu Tyr Glu Trp Asn Ala Arg Val Gln Ile Thr Thr Trp Gly Asn
 20 25 30
 Arg Asn Ala Ala Asp Tyr Gly Gly Leu Arg Asp Tyr Ala His Lys Glu
 35 40 45
 Trp Asn Gly Leu Leu Lys Asp Phe Tyr Tyr Met Arg Trp Lys Leu Tyr
 50 55 60
 Phe Asp Phe Leu Ser Gln Arg Ile Glu Gly Lys Thr Pro Ala Glu Ile
 65 70 75 80
 Asp Phe Tyr Ala Ile Glu Glu Pro Trp Thr Lys Ala Ala Asn Pro Tyr
 85 90 95
 Ser Ala Glu Ala Glu Gly Asp Cys Ile Glu Val Ala Lys Gln Val Met
 100 105 110
 Gln Ala Val Glu
 115

<210> 6724
 <211> 202
 <212> PRT
 <213> B.fragilis

<400> 6724
 Ala Met Thr Asp Tyr Phe Pro Pro Phe Phe Ser His Ile Asn Glu Lys
 1 5 10 15
 Phe Arg Thr Pro Ala Arg Ser Asn Leu Phe Met Leu Ile Val Gly
 20 25 30
 Leu Leu Ala Ala Phe Val Pro Ala Arg Leu Ala Gly Glu Met Thr Ser
 35 40 45
 Ile Gly Thr Leu Met Ala Phe Thr Leu Val Cys Ala Ala Val Leu Val
 50 55 60
 Val Arg Lys Thr Met Pro Asn Val Pro Arg Ser Phe Lys Thr Pro Phe

65				70				75				80			
Val	Pro	Leu	Val	Pro	Ile	Leu	Gly	Ile	Leu	Thr	Cys	Leu	Cys	Met	Met
				85				90						95	
Leu	Phe	Leu	Pro	Ala	Asp	Thr	Trp	Ile	Arg	Leu	Val	Leu	Trp	Met	Leu
			100					105					110		
Ile	Gly	Leu	Asp	Ile	Tyr	Val	Gly	Tyr	Gly	Met	Lys	His	Ser	Lys	Leu
		115					120					125			
Glu	His	Gly	Val	Lys	Asn	Arg	Arg	Gly	Gln	Ser	Ala	Leu	Asn	Met	Ile
	130					135					140				
Gly	Ile	Ala	Leu	Ser	Leu	Leu	Cys	Val	Ile	Thr	Gly	Leu	Trp	His	Gln
145					150					155					160
Gln	Thr	Val	Gly	Trp	Asn	Glu	Ser	Lys	Ile	Leu	Leu	Ile	Ile	Ser	Phe
			165						170					175	
Val	Phe	Ala	Phe	Thr	His	Cys	Ala	Tyr	Tyr	Met	Met	Arg	Ile	Trp	Lys
			180					185					190		
Gly	Thr	Thr	Lys	Gln	Thr	Asn	Asp	Asn	Gly						
		195					200								

<210> 6725

<211> 432

<212> PRT

<213> B.fragilis

<400> 6725

Thr	Leu	Cys	Cys	Ala	Pro	Phe	Ala	Met	Gln	Ala	Gln	Gln	Pro	Gln	Ile
1				5					10					15	
Tyr	Thr	Leu	Lys	Ser	Cys	Leu	Glu	Tyr	Gly	Leu	Gln	Asn	Asn	Tyr	Ser
			20					25					30		
Leu	Gln	Ile	Val	Arg	Asn	Glu	Glu	Gln	Val	Ser	Arg	Asn	Asn	Ala	Thr
		35				40						45			
Pro	Gly	Asn	Ala	Gly	Tyr	Leu	Pro	Thr	Leu	Asp	Phe	Thr	Ala	Gly	Tyr
	50					55					60				
Lys	Gly	Thr	Val	Asp	Asn	Thr	Asn	Thr	Lys	Val	Arg	Ala	Thr	Gly	Glu
65					70					75				80	
Ser	Val	Lys	Glu	Asn	Gly	Val	Phe	Asp	Gln	Thr	Leu	Asn	Val	Gly	Leu
				85					90					95	
Asn	Leu	Asn	Trp	Thr	Ile	Phe	Asp	Gly	Phe	Asn	Ile	Thr	Ala	Asn	Tyr
		100						105					110		
Gln	Lys	Leu	Lys	Glu	Leu	Gln	Leu	Gln	Gly	Glu	Thr	Asn	Thr	Arg	Ile
		115					120					125			
Ala	Ile	Glu	Asp	Leu	Ile	Ala	Asn	Leu	Ala	Ala	Glu	Tyr	Tyr	Asn	Tyr
	130					135					140				
Val	Gln	Gln	Lys	Ile	Arg	Leu	Gln	Asn	Phe	Arg	Tyr	Ala	Val	Ser	Leu
145					150					155					160
Ser	Lys	Glu	Arg	Leu	Arg	Ile	Val	Glu	Glu	Arg	Tyr	His	Ile	Gly	Asn
				165					170					175	
Phe	Ser	Arg	Leu	Asp	Tyr	Gln	Gln	Ala	Lys	Val	Asp	Phe	Asn	Ala	Asp
			180					185					190		
Ser	Ala	Lys	Tyr	Met	Lys	Gln	Gln	Glu	Leu	Leu	His	Thr	Ser	Arg	Ile
		195					200					205			
Gln	Leu	Asn	Glu	Leu	Met	Ala	Asn	Glu	Asp	Val	Asp	Gln	Pro	Leu	Val
	210					215					220				
Ile	Glu	Asp	Ser	Ile	Ile	Lys	Val	Asn	Ala	Gly	Leu	Arg	Phe	Glu	Glu
225					230					235					240
Leu	Trp	Asn	Ala	Thr	Leu	Leu	Thr	Asn	Ala	Ser	Leu	Leu	Lys	Ala	Glu
				245					250					255	
Gln	Asn	Asn	Thr	Leu	Ala	Met	Leu	Asp	Tyr	Lys	Lys	Val	Asn	Ser	Arg
			260					265					270		
Asn	Tyr	Pro	Tyr	Leu	Lys	Met	Asn	Thr	Gly	Tyr	Gly	Tyr	Thr	Phe	Asn

275	280	285
Lys Tyr Asp Ile Ala Ala	Asn Ser Gln Arg Gly	Asn Leu Gly Ala Asn
290	295	300
Phe Gly Val Thr Val Gly	Phe Asn Ile Phe Asp Gly	Asn Arg Arg Arg
305	310	315
Glu Lys Asn Asn Ala Arg	Ile Ala Ile Lys Asn Ala	Arg Leu Gln Arg
325	330	335
Glu Gln Leu Glu Gln Gly	Leu Lys Ala Asp Leu Ser	Asn Leu Trp Gln
340	345	350
Ala Tyr Gln Asn Asn Leu	Gln Met Leu Lys Leu Glu	Arg Gln Asn Leu
355	360	365
Val Ala Ala Lys Glu Asn	His Glu Ile Ala Met Glu	Arg Tyr Met Leu
370	375	380
Gly Asn Leu Ser Gly Ile	Glu Met Arg Glu Ala Gln	Lys Ser Leu Leu
385	390	395
Asp Ala Glu Glu Arg Ile	Leu Ser Ala Glu Tyr Asp	Thr Lys Leu Cys
405	410	415
Glu Ile Ser Leu Leu Gln	Ile Ser Gly Lys Ile Thr	Lys Tyr Leu Glu
420	425	430

<210> 6726

<211> 446

<212> PRT

<213> B.fragilis

<400> 6726

Arg Pro Val Trp	Arg Asn Val Leu	Asp Lys Leu Gly	Tyr Thr Lys Thr
1	5	10	15
Glu Ile Asn Glu	Phe Ile Ser Gly	Pro Gly Phe Phe	Ala Trp Trp Val
20	25	30	
Met Asn Asn Leu	Gly Gly Trp Gly	Gly Pro Asn Pro	Asp Ser Trp Tyr
35	40	45	
Thr Arg Gln Ile	Ala Leu Gln Lys	Lys Ile Leu Lys	Arg Met Arg Glu
50	55	60	
Tyr Gly Ile Glu	Pro Val Leu Pro	Gly Tyr Cys Gly	Met Val Pro His
65	70	75	80
Asn Ala Lys Glu	Lys Leu Gly Leu	Asn Val Ser Asp	Pro Gly Thr Trp
85	90	95	
Cys Gly Tyr Arg	Pro Ala Phe Leu	Gln Pro Ser Asp	Pro Arg Phe
100	105	110	
Glu Glu Ile Ser	Ser Leu Tyr Tyr	Lys Glu Leu Glu	Lys Leu Tyr Gly
115	120	125	
Lys Ala Asn Phe	Tyr Ser Met Asp	Pro Phe His Glu	Gly Gly Asn Thr
130	135	140	
Ala Gly Val Asp	Leu Asp Ala Ala	Gly Lys Ala Val	Met Lys Ala Met
145	150	155	160
Lys Lys Ala Asn	Pro Lys Ala Val	Trp Val Ala Gln	Ala Trp Gln Ala
165	170	175	
Asn Pro Arg Pro	Lys Met Ile Glu	Asn Leu Lys Ala	Gly Asp Leu Leu
180	185	190	
Ile Leu Asp Leu	Thr Ser Glu Cys	Arg Pro Gln Trp	Gly Asp Ser Thr
195	200	205	
Ser Glu Trp Tyr	Arg Lys Asn Gly	Tyr Gly Gln His	Asp Trp Ile Tyr
210	215	220	
Cys Met Leu Leu	Asn Tyr Gly Gly	Asn Val Gly Leu	His Gly Lys Met
225	230	235	240
Asp Asn Val Ile	Asp Asn Phe Tyr	Leu Ala Lys Ala	Asp Pro His Ala
245	250	255	
Ser Ala Thr Leu	Lys Gly Val Gly	Met Thr Pro Glu	Gly Ile Glu Asn

260	265	270
Asn Pro Val Met Tyr Glu Leu	Val Met Glu Leu Pro	Trp Arg Pro Asp
275	280	285
Arg Phe Thr Lys Glu Glu Trp	Leu Lys Glu Tyr Val	Lys Ala Arg Tyr
290	295	300
Gly Val Asp Asp Pro Val Val	Gln Ala Ala Trp Thr	Asn Leu Ala Asn
305	310	315
Ser Ile Tyr Asn Ser Pro Lys	Asn Leu Thr Gln Gln Gly	Thr His Glu
325	330	335
Ser Val Phe Cys Ala Arg Pro	Ala Glu Asp Val Tyr Gln	Val Ser Ser
340	345	350
Trp Ser Glu Met Lys Asp Tyr	Tyr Arg Pro Gln Glu Val	Ile Glu Ala
355	360	365
Ala Arg Leu Met Val Ser Val	Ala Asp Arg Phe Lys Gly	Asn Asn Asn
370	375	380
Phe Glu Tyr Asp Leu Val Asp	Ile Val Arg Gln Ala Leu	Ala Glu Lys
385	390	395
Gly Arg Leu Met Gln Lys Ala	Val Thr Ala Ala Tyr Arg	Ala Gly Asp
405	410	415
Lys Gln Leu Phe Ala Leu Ala	Ser Gly Lys Phe Leu Asp	Leu Ile Leu
420	425	430
Leu Gln Asp Lys Leu Leu Gly	Thr Arg Pro Glu Phe Arg	Val
435	440	445

<210> 6727

<211> 301

<212> PRT

<213> B.fragilis

<400> 6727

Lys Cys Ile Ser Met Lys Pro Tyr His Ile Asn Lys Lys Gln Ile Leu	
1 5 10 15	
Ile Met Gly Cys Leu Gly Met Phe Pro Leu Phe Ser Ser Ala Gln Asp	
20 25 30	
Ile Leu Ser Thr Ser Gly Thr Ser Arg Trp Asp Tyr Ser Asn Ser Arg	
35 40 45	
Val Glu Arg Glu Pro Gly Arg Asp Ala Leu Asp Ile Thr Phe Ser Val	
50 55 60	
Phe Pro Leu Ala Gly Leu Gly Ser Gln Glu Val Ala Tyr Leu Phe Pro	
65 70 75 80	
Val Tyr Val Ser Ala Asp Gly Arg Asp Ser Val Arg Leu Glu Pro Val	
85 90 95	
Cys Val Ala Gly Lys Arg Arg Tyr Lys Val Ile Lys Arg Arg Lys Ala	
100 105 110	
Leu Gly Asn Leu Lys Pro Gly Asn Pro Gly Ser Gly Glu Val Arg Ser	
115 120 125	
Ala Lys Val Leu Glu Ser Ser Gly Leu Thr Val Lys Arg Ser Val Pro	
130 135 140	
Phe Glu Arg Trp Met Ala Asp Gly Arg Leu Val Val Arg Glu Val Ser	
145 150 155 160	
Tyr Gly Cys Ala Glu Cys Gly Thr Asn Glu Ser Glu Asp Ile Ala Phe	
165 170 175	
Gln Ala Gly Ile Pro Leu Phe Gly Glu Lys Asp Tyr Ala Tyr Ser Phe	
180 185 190	
Ile Glu Pro Glu Lys Val Met Ile Lys Cys Tyr Lys Asp Ser Phe Asp	
195 200 205	
Cys Lys Val Val Phe Pro Val Ala Arg His Asp Leu Gln Glu Asp Phe	
210 215 220	
Ala Gly Asn Ala Gln Glu Leu Asp Ser Leu Lys Lys Phe Leu Ser Glu	

Ile	Asn	Pro	Glu	Asp	Ile	Arg	Ser	Met	Gln	Val	Leu	Lys	Asp	Ala	Ser
210						215					220				
Ser	Thr	Ala	Ile	Tyr	Gly	Ser	Arg	Gly	Ser	Asn	Gly	Val	Val	Leu	Ile
225					230					235					240
Thr	Thr	Lys	Ile	Gly	Lys	Ala	Gly	Val	Arg	Glu	Ile	Met	Phe	Asp	Ala
				245					250					255	
Ser	Val	Gly	Val	Ser	Asn	Val	Tyr	Lys	Arg	Tyr	Asp	Ile	Leu	Gly	Ala
			260					265					270		
Tyr	Asp	Tyr	Ala	Leu	Ala	Leu	Lys	Glu	Val	Lys	Gly	Ile	Asp	Phe	Ser
	275						280					285			
Asn	Glu	Glu	Met	Gln	Ser	Tyr	Gln	Asn	Gly	Thr	Gly	Gly	Ile	Asp	Trp
290						295					300				
Gln	Asp	Glu	Ile	Phe	Arg	Thr	Gly	Ile	Thr	Gln	Asn	Tyr	Lys	Leu	Ala
305					310					315					320
Leu	Ser	Asn	Gly	Ser	Glu	Lys	Thr	Gln	Tyr	Tyr	Ile	Ser	Ala	Asn	Tyr
				325					330					335	
Met	Ser	Gln	Glu	Gly	Val	Val	Ile	Glu	Ser	Lys	Asn	Glu	Arg	Tyr	Gln
			340					345					350		
Ala	Lys	Ala	Asn	Leu	Ser	Ser	Gln	Leu	Thr	Asp	Trp	Leu	His	Ile	Thr
	355						360					365			
Ala	Asp	Ile	Asn	Ala	Ser	His	Gly	Val	Arg	Arg	Gly	Gly	Ser	Phe	Ala
370						375					380				
Ser	Gly	Lys	Asp	Asn	Pro	Ile	Trp	Ile	Ala	Leu	Asn	Tyr	Ser	Pro	Thr
385					390					395					400
Met	Thr	Met	Met	Ala	Glu	Asn	Gly	Asn	Tyr	Asn	Thr	Asp	Thr	Tyr	Asn
				405				410						415	
Ser	Ile	Ala	Ser	Asn	Pro	Val	Gly	Ile	Leu	Lys	Leu	Gln	Ser	Gly	Glu
			420					425					430		
Thr	Met	Thr	Asn	Val	Phe	Asn	Gly	Arg	Val	Asp	Leu	Arg	Leu	Asp	Ile
			435				440					445			
Met	Lys	Gly	Leu	Thr	Phe	Thr	Thr	Thr	Asn	Gly	Val	Asp	Tyr	Tyr	Asp
	450					455					460				
Gly	Lys	Ser	Tyr	Ser	Phe	Ser	Ser	Lys	Arg	Val	Gly	Thr	Lys	Ser	Gly
465					470					475					480
Met	Gly	Asn	Asn	Asp	Thr	Tyr	Arg	Leu	Met	Leu	Gln	Ser	Ser	Asn	Asn
				485				490						495	
Leu	Thr	Tyr	Thr	Gly	Ser	Trp	Asn	Asp	His	His	Leu	Thr	Ala	Thr	Ala
			500					505					510		
Val	Tyr	Glu	Val	Thr	Ser	Ser	Glu	Thr	Arg	Thr	Met	Gly	Ile	Thr	Gly
			515				520					525			
Asn	Asn	Leu	Leu	Thr	Glu	Gly	Val	Gly	Trp	Trp	Asn	Val	Gly	Met	Ala
	530					535					540				
Ser	Ser	Arg	Asp	Ala	Asn	Asn	Gly	Tyr	Glu	Gln	Trp	Ala	Leu	Met	Ser
545					550					555					560
Gly	Val	Ala	Arg	Val	Met	Tyr	Asn	Phe	Lys	Asp	Arg	Tyr	Met	Leu	Thr
				565					570					575	
Gly	Thr	Phe	Arg	Ala	Asp	Gly	Ser	Ser	Arg	Phe	Ala	Lys	Lys	Lys	Trp
			580					585					590		
Gly	Tyr	Phe	Pro	Ser	Ile	Ala	Ala	Ala	Trp	Thr	Leu	Ser	Asn	Glu	Asp
	595					600						605			
Phe	Met	Lys	Asp	Val	Ser	Ser	Val	Gln	Asp	Ile	Lys	Leu	Arg	Ala	Ser
	610					615					620				
Tyr	Gly	Ile	Val	Gly	Ser	Gln	Ala	Ile	Ser	Pro	Tyr	Ala	Thr	Met	Gly
625					630					635					640
Leu	Met	Ser	Ala	Thr	Ala	Tyr	Asn	Phe	Gly	Thr	Asn	Ser	Asn	Phe	Thr
				645					650					655	
Gly	Tyr	Trp	Ala	Asn	Asp	Ile	Ala	Thr	Pro	Glu	Leu	Thr	Trp	Glu	Lys
			660				665						670		
Thr	Lys	Gln	Phe	Asp	Leu	Gly	Leu	Glu	Phe	Ser	Leu	Phe	Asp	Arg	Arg

675	680	685
Leu Asn Phe Ser Val Asp Tyr Phe Tyr Lys Arg Thr Thr Asp Ala Leu		
690	695	700
Leu Lys Arg Ser Ile Pro Gly Tyr Val Gly Gly Asn Ser Phe Trp Val		
705	710	715
Asn Asp Gly Glu Ile Ser Asn Arg Gly Ile Asp Leu Ser Val Thr Ala		
	725	730
Arg Ile Met Gln Asn Asp Arg Phe Gln Trp Thr Ser Thr Leu Asn Gly		
	740	745
Thr Tyr Leu Lys Asn Arg Val Glu Arg Leu Ser Gly Gly Glu Asn Asp		
	755	760
Phe Ile Asn Gly Ser Ser Pro Ala Ala Gly Met Val Asp Tyr Ala Thr		
	770	775
Ile Ile Lys Pro Gly Glu Ala Ile Gly Thr Phe Trp Gly Tyr Glu Trp		
785	790	795
Thr Gly Leu Asp Glu Asn Gly His Asp Thr Tyr Thr Asp Val Asp Gly		
	805	810
Asn Gln Met Ile Asp Gly Gly Asp Arg Lys Val Ile Gly Lys Ala Asn		
	820	825
Pro Asp Phe Thr Leu Gly Trp Asn Asn Ser Leu Ser Tyr Lys Asn Trp		
	835	840
Asp Leu Asn Leu Phe Phe Asn Gly Ser Phe Gly Ala Lys Arg Leu Asn		
	850	855
Leu Val Arg Tyr Thr Met Ala Ser Ala Glu Gly Asn Ser Arg Phe Val		
865	870	875
Thr Leu Ala Asp Ala Tyr Leu Lys Gly Phe Asp Lys Ile Gly Ser Ser		
	885	890
Ala Thr Tyr Pro Ser Leu Thr Glu Gly Gly Asn Asn Leu Gln Pro Val		
	900	905
Ser Thr Lys Trp Leu Glu Asn Ala Asp Phe Leu Arg Leu Glu Asn Ile		
	915	920
Ser Leu Ser Tyr Thr Phe Pro Lys Lys Thr Thr Gly Phe Ala Asp Leu		
	930	935
Arg Leu Thr Phe Ser Cys Gln Asn Leu Phe Thr Ile Thr Gly Tyr Lys		
945	950	955
Gly Met Asp Pro Ala Gly Thr Thr Phe Ser Asn Ser Ser Val Asp Val		
	965	970
Asp Ala Gly Ile Asp Met Gly Ala Tyr Pro Ser Pro Arg Thr Phe Thr		
	980	985
Phe Gly Leu Arg Met Asn Phe		990
	995	

<210> 6730

<211> 68

<212> PRT

<213> B.fragilis

<400> 6730

Arg Pro Gly Thr Phe Thr Gly His Asp His Phe Pro Glu Phe Leu Tyr		
1	5	10
Val Arg Gly Glu Thr Tyr Gly Met Tyr Ala Ala Phe Phe Glu Tyr Leu		
	20	25
Val Gln Arg His Thr Pro Gly Thr Val Thr Gln Ala Leu His Glu Asp		
	35	40
Arg Ile His Glu Thr Arg Ser Met Thr Glu Asn Asn His Ser Thr Gly		
	50	55
Gly Ala Asp Lys		60
65		

<210> 6731
 <211> 287
 <212> PRT
 <213> B.fragilis

<400> 6731

Ala	Thr	Lys	Thr	Glu	Thr	Met	Glu	Leu	Phe	Tyr	Leu	Asn	Glu	His	Thr
1				5					10					15	
Ser	Cys	Tyr	Asn	Tyr	Ser	Lys	Ser	Met	Gln	Glu	Gly	Phe	Arg	Tyr	Tyr
			20					25					30		
Lys	Phe	Asp	Glu	Gly	Leu	Asn	His	Glu	Glu	Glu	Leu	Val	Lys	Asp	Cys
		35					40					45			
Ile	Leu	Phe	Val	Leu	Lys	Gly	Ser	Leu	Gln	Phe	Ser	Cys	Asn	Gly	Phe
	50					55				60					
Gln	Phe	Thr	Val	Ser	Ser	Gly	Glu	Met	Val	Phe	Phe	Cys	Arg	Asp	Ser
65					70					75				80	
Leu	Phe	Asn	Thr	Gln	Ser	Leu	Glu	Lys	Cys	Glu	Val	Val	Ala	Ala	Leu
				85					90					95	
Phe	Glu	Gly	Gly	Val	Trp	Pro	Cys	Gln	Arg	Ala	Ser	Phe	Ser	Glu	Leu
			100					105					110		
Tyr	His	Leu	Arg	Glu	Ile	Val	Glu	Tyr	Arg	Met	Glu	Pro	Leu	Glu	Ile
		115					120						125		
Arg	Asp	Arg	Leu	Cys	Lys	Phe	Leu	Glu	Leu	Leu	Val	Cys	Tyr	Leu	Glu
	130					135					140				
Asp	Gly	Ala	Asn	Cys	Ile	His	Phe	His	Glu	Ile	Lys	Leu	Lys	Glu	Leu
145					150					155				160	
Phe	Trp	Asn	Ile	Arg	Phe	Tyr	Tyr	Ser	Arg	Gln	Glu	Leu	Ala	Asn	Phe
				165					170					175	
Phe	Tyr	Met	Ile	Ile	Gly	Arg	Ser	Gln	Asp	Phe	Lys	Asn	Lys	Val	Leu
			180					185					190		
Asn	Asn	Tyr	Lys	Ser	Cys	Arg	Thr	Val	Lys	Glu	Leu	Ala	Ser	Ala	Cys
		195					200						205		
Asp	Ile	Ser	Leu	Ser	Ala	Phe	Lys	Arg	Gln	Phe	Ser	Ala	Glu	Phe	Gly
	210					215					220				
Glu	Ala	Pro	Ala	Glu	Trp	Met	Gln	Lys	Gln	Leu	Leu	Gly	Glu	Ile	Lys
225					230					235				240	
Tyr	Lys	Leu	Ser	Val	Thr	Asp	Leu	Pro	Leu	Gly	Thr	Ile	Ala	Asn	Glu
				245					250					255	
Leu	Glu	Phe	Ser	Ser	Leu	Ala	His	Phe	Ser	Arg	Phe	Cys	Lys	Arg	Cys
			260					265					270		
Leu	Gly	Cys	Ser	Pro	Arg	Glu	Leu	Arg	Gln	Gln	Ile	Lys	Gly	Gly	
		275					280						285		

<210> 6732
 <211> 207
 <212> PRT
 <213> B.fragilis

<400> 6732

Ser	Asn	Glu	Thr	Met	Asn	Asn	Ser	Met	Met	Lys	Pro	Phe	Phe	Leu	Leu
1				5					10					15	
Val	Phe	Leu	Leu	Cys	Ser	Ala	Gly	Ala	Phe	Ser	Gln	Lys	Val	Ala	Leu
			20					25					30		
Lys	Asn	Asn	Leu	Ala	Tyr	Asp	Ala	Leu	Lys	Thr	Pro	Asn	Leu	Ser	Leu
		35					40					45			
Glu	Phe	Ser	Met	Gly	Arg	Lys	Trp	Thr	Leu	Asp	Thr	Gln	Val	Gly	Met
	50					55				60					
Asn	Phe	Phe	Phe	Tyr	Thr	Arg	Asp	Ala	Thr	Ser	Ser	Arg	Tyr	Lys	Ala
65					70					75				80	

[illegible]

<400> 6733

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<210> 6734
<211> 467
<212> PRT
<213> B.fragilis
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<400> 6734

Lys	Lys	Ser	Tyr	Thr	Tyr	Lys	Thr	Tyr	Arg	Ser	Leu	Thr	Asp	Gly	Ser
1				5					10					15	
Gly	Thr	Asp	Phe	Pro	Ser	Phe	Val	Gln	Phe	Ser	Arg	Leu	Val	Thr	Glu
			20					25					30		
Leu	Phe	Trp	Ser	Phe	Ser	Asp	Leu	Met	His	Ile	Ser	Leu	Cys	Phe	Leu
			35				40					45			
Ser	Arg	Lys	Gln	Gly	Ser	Val	Lys	Cys	Leu	Thr	Asn	Lys	Lys	Leu	Met
	50					55					60				
Ala	Thr	Val	Lys	Thr	Val	Leu	Val	Lys	Gly	Arg	Ser	Asn	Arg	Ser	Gly
65				70					75					80	
Lys	Phe	Pro	Leu	Val	Gln	Val	Leu	His	Lys	Arg	Arg	Lys	Lys	Val	
			85					90					95		
Val	Tyr	Thr	Gly	Phe	Ser	Ile	Pro	Asp	Thr	Leu	Phe	Asp	Pro	Val	Lys
			100					105					110		
Gly	Arg	Val	Ile	Asp	Gly	Gly	Glu	Asn	Thr	Pro	Glu	Ser	Ile	Arg	Arg
		115					120					125			
Ile	Asn	Asn	Arg	Cys	Glu	Ser	Ile	Ser	Arg	Val	Leu	Leu	Lys	Cys	Ile

130 135 140
 Ser Met Ile Glu Lys Lys Ser Arg Glu Tyr Glu Ile Glu Asp Val Phe
 145 150 155 160
 Arg Thr Tyr Gly Val Leu Thr Arg Glu Ala Gly Phe Tyr Phe Tyr Phe
 165 170 175
 Ser Arg Lys Ile Arg Glu Leu Arg Glu Ser Gly His Glu Gly Thr Ala
 180 185 190
 Arg Ala Tyr Ala Ser Ser Leu Arg Ser Met Gln Arg Tyr Leu Gly Lys
 195 200 205
 Lys Asp Phe Pro Phe Ile Lys Leu Ser Ser Arg Ile Ile Ser Asp Tyr
 210 215 220
 Gln Gly Lys Leu Leu Ala Ser Gly Ile Cys Asp Asn Thr Ile Gly Phe
 225 230 235 240
 Tyr Leu His Asn Ile Lys Ala Leu Phe Arg Lys Gly Cys Arg Glu Met
 245 250 255
 Gly Leu Glu Leu Pro Cys Pro Phe Arg Asp Ile Ser Ile Lys Thr Glu
 260 265 270
 Lys Thr Leu Lys Arg Ser Leu Asp Pro Val Val Ile Lys Thr Leu Ser
 275 280 285
 Ala Ile Glu Leu Glu Lys Asp Ser Pro Leu Ser Leu Ala Arg Asp Ile
 290 295 300
 Phe Met Phe Ser Phe Tyr Thr Arg Gly Met Ser Phe Val Asp Ile Ala
 305 310 315 320
 Leu Leu Lys Lys Arg His Val Phe Pro Gly Glu Ile Cys Tyr Arg Arg
 325 330 335
 His Lys Thr Asp Gln Leu Met Arg Val Gly Ile Asn Lys Glu Ile Ser
 340 345 350
 Arg Ile Leu Glu Arg Tyr Lys Asn Val Pro Gly Glu Tyr Ile Phe Pro
 355 360 365
 Leu Phe Pro Ala Glu Arg Asp Pro Tyr Ala Gly Tyr Arg Ser Ala Tyr
 370 375 380
 His Arg Ile Arg Tyr Ser Leu Gly Lys Ile Ser Arg Val Ile Gly Leu
 385 390 395 400
 Glu Phe Pro Leu Arg Leu His Ala Ala Arg His Ser Trp Ala Thr Ile
 405 410 415
 Ala Lys Val Asn Gly Ala Ser Val His Val Ile Gly Glu Cys Leu Gly
 420 425 430
 His Thr Ser Glu Lys Thr Thr Arg Ile Tyr Leu Lys Glu Leu Asp His
 435 440 445
 Ser Ala Leu Asp Ala Val Asn Asn Gln Val Ala Asp Phe Ile Leu Ala
 450 455 460
 Val Asp Asp
 465

<210> 6735

<211> 486

<212> PRT

<213> B.fragilis

<400> 6735

Asn Arg Leu Gln Ile Ile Ser Thr Phe Gly Gln Ala Arg Val Cys Cys
 1 5 10 15
 Arg Arg Ala Asn Leu Val Glu Ser Leu Gln Ile Gly Val Cys Gln Ser
 20 25 30
 Tyr Lys Ala Gly Ile Pro Phe Gly Arg Ser His Arg Ile Ser Tyr Lys
 35 40 45
 Ile Gln Thr Phe Gly Ser Glu Arg Ser Val Glu Glu Gln Val Gln Ile
 50 55 60
 Pro Val Phe Ile Arg Gln Gly Val Ile Pro Ser Gln Gly Glu Ile Gly

65		70		75		80
Ile Gly Leu Ala Asp Asp Leu Ala Val Ala Thr Val Tyr His Leu Ile						
		85		90		95
Ser Ile Tyr Ile Arg Val Ser Val Met Ser Val Phe Ile Gln Ala Gly						
		100		105		110
Pro Phe Ile Ser Pro Lys Ser Thr Asp Gly Leu Thr Arg Leu Asp Asn						
		115		120		125
Gly Gly Ile Ile Asn His Thr Gly Ser Arg Thr Gly Ala Val Asp Glu						
		130		135		140
Ile Ile Leu Thr Thr Gly Lys Ala Phe His Ala Val Leu Gln Ile Ser						
145		150		155		160
Thr Val Gln Gly Gly Gly Pro Leu Glu Pro Val Ile Leu His Asn Pro						
		165		170		175
Gly Gly His Ala Gln Ile Asn Thr Thr Ile Thr Asp Phe Ala Val Ile						
		180		185		190
His Pro Lys Arg Val Thr Ala Asp Ile Ser Gly Asp Thr Ser Phe Lys						
		195		200		205
Gln Arg Ile Cys Ser Thr Leu Ile Glu Ile Val His Thr Glu Ile Gln						
		210		215		220
Pro Pro Val Glu Gln Gly Glu Leu Gln Thr Gln Val Glu Leu Leu Gly						
225		230		235		240
Leu Leu Pro Arg Lys Leu Gly Ser Arg Tyr Val Ile Cys Pro Ile Thr						
		245		250		255
Gly Lys Ile Thr Val Gly Ser Lys Ile Val Cys Ser Ser Thr His Lys						
		260		265		270
Ala His Gly Arg Val Arg Thr Asp Gly Leu Ala Thr His Asn Thr Ile						
		275		280		285
Thr Gly Ala Lys Phe Asn Val Leu Asn Arg Gly Asn Ile Leu His Glu						
		290		295		300
Ile Leu Ile Ala Gln Arg Pro Ser Cys Gly Asn Arg Arg Lys Val Pro						
305		310		315		320
Pro Phe Leu Phe Gly Lys Ala Arg Arg Thr Val Gly Thr Lys Cys Ser						
		325		330		335
Gly Lys His Ile Thr Ile Leu Lys Ile Val His Asp Thr Gly His Ser						
		340		345		350
Arg His Gln Arg Pro Leu Leu Val Thr Ile Val Cys Ile Thr Arg Gly						
		355		360		365
Ser His Thr His Ile Pro Pro Ala His Thr Leu Gly Gln Gln Val Val						
		370		375		380
Thr Gly Tyr Thr His Cys Pro Gly Phe Gly Gly Gly His Leu Ile Tyr						
385		390		395		400
Ser Arg Gly Cys Gln Met Met Val Ile Pro Gly Thr Cys Ile Cys Gln						
		405		410		415
Ile Val Gly Ala Leu Gln His Gln Thr Ile Ser Ile Val Ile Ala His						
		420		425		430
Thr Thr Leu Gly Pro His Ser Phe Gly Ala Glu Thr Ile Thr Phe Pro						
		435		440		445
Val Ile Ile Val His Ala Ile Gly Cys Gly Glu Cys Gln Pro Leu His						
		450		455		460
Tyr Ile Lys Ala Gln Ile Asn Thr Ser Val Glu Asn Ile Gly His Cys						
465		470		475		480
Leu Ser Arg Leu Gln Leu						
		485				

<210> 6736

<211> 342

<212> PRT

<213> B.fragilis

<400> 6736

Ile Lys Arg Lys Met Arg Thr Ile Ala Cys Lys Thr Val Trp Ala Leu
 1 5 10 15
 Leu Ile Gly Val Ser Leu Val Leu Ser Leu Asn Ser Cys Ser Lys Asp
 20 25 30
 Pro Val Ile Pro Glu Asp Glu Thr Lys Asn Lys Leu His Glu Asp Pro
 35 40 45
 Ala Lys Met Thr Val Arg Leu Val Glu Cys His Leu His Ala Asp Trp
 50 55 60
 Asn Glu Ile Gln Lys Ala Gly Gly Pro His Gln Asn Pro Glu Ser Pro
 65 70 75 80
 Ala Arg Tyr Met Lys Arg Val Gln Glu Ile Thr Tyr Glu Leu Lys Thr
 85 90 95
 Gly Ser Gly Trp Thr Leu Ala Glu Gly Ser Gln Gly Lys Phe Tyr Val
 100 105 110
 Gln Lys Asn Gly Glu Tyr Lys Asn Gly Asn Asn Phe Thr Pro Ala Pro
 115 120 125
 Val Tyr Leu Met Phe Ile Tyr Tyr Tyr Asn Ser Lys Gly Glu Leu Met
 130 135 140
 Asn Gly Gln Phe Val Glu Asn Gly Gln Glu Asn Ile His Gln His Phe
 145 150 155 160
 Phe Thr Pro Glu Asn Val Arg Pro Thr Phe Asp Gly Lys Pro Glu Ala
 165 170 175
 Asp Asp Asn Asp Pro Glu Ala Leu Val Asp Tyr Leu Tyr Val Asp Thr
 180 185 190
 Thr Pro Trp Asp Lys Thr Lys His Asp Asn Glu Ala Glu Ile Thr Gly
 195 200 205
 Ser Thr Asn Pro Val Gly Leu Lys Gly Val Ile Arg Phe Leu Lys Asp
 210 215 220
 Arg Lys Glu Phe Asp Leu Lys Leu Arg Leu Tyr His Gly Tyr Asn Ser
 225 230 235 240
 Lys Lys Asn Pro Gln Thr Asn Gly Phe Asp Pro Phe Tyr Lys Pro Ser
 245 250 255
 Gly Val Leu Ile Gln Arg Gly Thr Trp Asp Ile Asn Leu Ser Ile Pro
 260 265 270
 Val Val Val Phe Trp Ser Arg Glu Glu Phe Val Asp Val Asp Pro Glu
 275 280 285
 Ala Asp Val Asn Leu Ile Gly Glu Asp Ser Leu Asp Glu Asp Ser Asn
 290 295 300
 Arg Thr Leu His Ser Ile Met Lys Thr Phe Ser Leu Thr Trp Lys Glu
 305 310 315 320
 Ala Leu Glu Glu Phe Ile Ser Tyr Thr Tyr Gln Ala Gly Asp Val Glu
 325 330 335
 Ala Gly Ser Ile Trp Leu
 340

<210> 6737

<211> 65

<212> PRT

<213> B.fragilis

<400> 6737

Cys His Gly Asn Asp Leu His Thr Pro Phe Pro Tyr Gln Leu Lys Ser
 1 5 10 15
 His Val Gln Val Thr Tyr Pro Ser Phe Arg Lys His Met Thr Gly Lys
 20 25 30
 Ala Gly Ala Glu Asn Thr Glu Lys Thr Ile Gln Asn Leu Val His Asp
 35 40 45
 Ile Lys Lys Leu Tyr Ile Glu Asn Gln Arg Ser Asp Pro Pro Ile Asn

50

55

60

Trp
65

<210> 6738
<211> 260
<212> PRT
<213> B.fragilis

<400> 6738

Arg	Gly	Glu	Asp	Ala	Ala	Arg	Pro	Arg	Ala	Thr	Ser	Ala	Arg	Arg	Arg
1				5					10				15		
Ala	Pro	Ala	Pro	Thr	His	Asp	Ala	Asp	Arg	Ser	Thr	Arg	Ala	Pro	Arg
			20					25					30		
Thr	Thr	Gly	Arg	Ala	Pro	Pro	Ala	Arg	Thr	Gly	Thr	Pro	Gln	Pro	Thr
		35					40					45			
Thr	Pro	Asp	Arg	Ala	Ala	Arg	Arg	Ala	Arg	Gly	Ala	Arg	Glu	Arg	Gly
	50					55					60				
Arg	Lys	Arg	Arg	Arg	Lys	Thr	Arg	Lys	Lys	Lys	Glu	Glu	Lys	Lys	Lys
65					70					75				80	
Lys	Thr	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				85					90					95	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			100					105					110		
Lys	Lys	Lys	Lys	Lys	Asn	Lys	Lys	Lys	Lys	Lys	Lys	Arg	Lys	Lys	Lys
			115				120					125			
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			130				135				140				
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
145						150				155				160	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				165					170					175	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			180					185					190		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
			195				200					205			
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
	210					215					220				
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
225						230				235				240	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				245				250						255	
Thr	Pro	Met	Asn												
			260												

<210> 6739
<211> 109
<212> PRT
<213> B.fragilis

<400> 6739

Gln	Thr	His	Arg	Gly	Cys	Thr	Glu	Glu	Met	Arg	Glu	Lys	Asn	Asp	Asp
1				5					10				15		
Asp	Ile	Cys	Phe	Pro	Gly	Asp	Lys	Ile	Pro	Tyr	Arg	Pro	Ala	Ser	Arg
			20					25					30		
Asn	Ile	Ile	Val	Tyr	Lys	Asn	Pro	Cys	Leu	Asp	Lys	Arg	Gly	Glu	Arg
		35					40					45			
Lys	Glu	Thr	Asp	Gly	Thr	Ile	Phe	Arg	Arg	Ile	Val	Thr	Gly	Val	Ser
	50					55						60			

Leu Phe Val Met Gly Tyr Ala Arg Met Phe Pro Val Asn Met Lys Ser
 65 70 75 80
 Phe His Glu Glu Lys Gly His Gln Cys Gln Gln Gln His Thr Cys Tyr
 85 90 95
 Asp Ser Pro Leu Ser Leu Ser Phe Phe Arg Thr Ile His
 100 105

<210> 6740

<211> 259

<212> PRT

<213> B.fragilis

<400> 6740

Gly Ala Ala Arg Thr Pro Arg Asp Arg Ala Gln Gln Ala Arg Ala Asp
 1 5 10 15
 Glu Pro Arg Arg Pro Arg Thr Thr Arg Thr Gly Ala His Glu His Arg
 20 25 30
 Ala Arg Gln Ala Gly Pro Arg Pro Arg Glu Gln Ala Arg Arg Asn Pro
 35 40 45
 Gln Pro Gln Thr Ala Arg Arg Ala Ala His Gly Glu Gln Gly Arg Glu
 50 55 60
 Gly Gly Arg Asp Gly Gly Lys Arg Glu Lys Lys Arg Lys Lys Lys Lys
 65 70 75 80
 Lys Lys Pro Arg Lys Lys Lys Lys Lys Lys Lys Lys Lys Arg Lys
 85 90 95
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 100 105 110
 Lys Lys Lys Lys Lys Lys Thr Lys Lys Lys Lys Lys Gly Lys Lys
 115 120 125
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 130 135 140
 Lys Lys Lys Arg Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 145 150 155 160
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 165 170 175
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 180 185 190
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 195 200 205
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 210 215 220
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 225 230 235 240
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 245 250 255
 Lys His Gln

<210> 6741

<211> 512

<212> PRT

<213> B.fragilis

<400> 6741

Phe Leu Asn Gly Arg Ser Gln Pro Lys Leu Thr Pro Glu Asn Phe Phe
 1 5 10 15
 Ser Thr Gln Asp Glu Leu Asn Met Ser Ile Tyr Ala Leu Tyr Gln Lys
 20 25 30
 Val Asn Leu Ser Gln Val Tyr Thr Asn Met Gln Leu Ser Gln Trp Gln

[illegible]

<210> 6742
 <211> 278
 <212> PRT
 <213> B.fragilis

<400> 6742

Ala	Arg	Arg	Gly	Arg	Arg	Ala	Thr	Ala	Arg	Asn	Lys	Arg	Ala	Pro	Thr
1				5					10					15	
Ser	Pro	Gly	Ala	His	Ala	Arg	Arg	Gly	Gln	Glu	His	Thr	Ser	Thr	Ala
			20					25					30		
His	Asp	Arg	Gln	Gly	Pro	Ala	Arg	Ala	Asn	Arg	His	Ala	Ala	Thr	His
			35				40					45			
Asn	Pro	Arg	Pro	Arg	Gly	Ala	Pro	Arg	Thr	Gly	Ser	Lys	Gly	Glu	Arg
			50			55					60				
Glu	Glu	Glu	Thr	Glu	Glu	Asn	Ala	Lys	Lys	Lys	Gly	Arg	Lys	Lys	Lys
65					70					75					80
Lys	Asn	Gln	Glu	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Glu	Lys
				85					90					95	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				100				105					110		
Lys	Lys	Lys	Lys	Lys	Lys	Gln	Lys	Lys	Lys	Lys	Lys	Lys	Glu	Lys	Lys
				115				120					125		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
				130			135				140				
Lys	Lys	Lys	Glu	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
145					150					155					160
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
					165					170				175	
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
					180				185				190		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
					195				200				205		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
					210				215				220		
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
225						230				235					240
Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Lys
					245				250					255	
Asn	Thr	Asn	Glu	Leu	Thr	Cys	Pro	Lys	Ile	Thr	Leu	Gln	Leu	Leu	Ser
			260					265					270		
Ile	Ser	Leu	Ile	Ile	Leu										
					275										

<210> 6743
 <211> 430
 <212> PRT
 <213> B.fragilis

<400> 6743

Arg	Arg	Trp	Gly	Met	Met	Arg	Arg	Met	Asp	Val	His	Glu	Ala	Ala	Asn
1				5					10					15	
Arg	Arg	Leu	Lys	Ile	Ile	Phe	Asp	Tyr	Phe	Asp	Tyr	Val	Tyr	Val	Ser
			20					25					30		
Phe	Ser	Gly	Gly	Lys	Asp	Ser	Gly	Ile	Leu	Leu	His	Leu	Cys	Met	Asp
			35				40					45			
Tyr	Ile	Arg	Met	His	Ala	Pro	Gly	Arg	Lys	Leu	Gly	Val	Phe	His	Met
			50			55					60				
Asp	Tyr	Glu	Val	Gln	Tyr	Arg	Gln	Ser	Thr	Glu	Tyr	Val	Glu	Arg	Met

65				70				75				80
Phe	Ser	Asn	Asn	Arg	Asp	Ile	Leu	Glu	Val	Phe	His	Cys
				85				90				95
Phe	Lys	Val	Pro	Thr	Cys	Thr	Ser	Met	Tyr	Gln	Gln	Tyr
			100					105				110
Trp	Gln	Glu	Gly	Tyr	Gln	Asn	Ile	Trp	Val	Arg	Gln	Met
		115					120					125
Ala	Leu	Thr	Val	Lys	Asp	Phe	Asp	Phe	Trp	Asn	Asp	Ser
	130					135				140		Leu
Tyr	Asp	Phe	Gln	Ser	Leu	Phe	Pro	Ser	Trp	Ile	Arg	Lys
145					150					155		Lys
Cys	Lys	Arg	Val	Cys	Cys	Leu	Val	Gly	Ile	Arg	Thr	Gln
			165					170				Glu
Asn	Arg	Trp	Arg	Ala	Ile	His	Ser	Asp	Lys	Asn	Tyr	Arg
		180						185				Lys
Asn	Tyr	Lys	Trp	Thr	His	Arg	Val	Gly	Tyr	Tyr	Thr	Tyr
		195					200					205
Pro	Met	Tyr	Asp	Trp	Lys	Thr	Thr	Asp	Val	Trp	Thr	Gly
	210					215						Tyr
Tyr	Gly	Trp	Asp	Tyr	Asn	Arg	Leu	Tyr	Asp	Leu	Tyr	Tyr
225					230					235		Gln
Ile	Pro	Leu	Ser	Arg	Gln	Arg	Val	Ala	Ser	Pro	Phe	Ile
			245						250			Ser
Val	Ser	Thr	Leu	His	Leu	Tyr	Lys	Val	Ile	Asp	Pro	Asp
		260						265				Thr
Arg	Met	Val	Ser	Arg	Val	Asn	Gly	Val	Ser	Phe	Ala	Gly
	275						280					Met
Asn	Thr	Val	Ala	Met	Gly	Trp	Arg	Ser	Ile	Ser	Cys	Pro
	290				295						300	Asp
Thr	Trp	Lys	Glu	Tyr	Met	Tyr	Phe	Leu	Leu	Asp	Thr	Leu
305					310					315		Pro
Thr	Arg	Glu	Asn	Tyr	Leu	Glu	Lys	Leu	Arg	Val	Ser	Gln
			325						330			Lys
Arg	Glu	Lys	Gly	Gly	Cys	Leu	Gly	Glu	Glu	Thr	Ile	Gly
		340						345				Lys
Ala	Ala	Gly	Val	Pro	Phe	Thr	Val	Glu	Glu	Cys	Thr	Thr
	355						360					Tyr
Asp	Lys	Arg	Pro	Val	Arg	Met	Glu	Tyr	Ile	Asp	Glu	Ile
	370					375				380		Asp
Glu	Phe	Arg	Glu	Ile	Pro	Thr	Tyr	Lys	Arg	Met	Cys	Val
385					390					395		Cys
Lys	Asn	Asp	His	Thr	Cys	Lys	Tyr	Met	Gly	Phe	Thr	Gln
			405						410			Thr
Glu	Arg	Glu	Met	Lys	Glu	Arg	Val	Leu	Lys	Arg	Tyr	Lys
		420						425				Leu

<210> 6744

<211> 176

<212> PRT

<213> B.fragilis

<400> 6744

Leu	Ile	Phe	Phe	Leu	Ala	Arg	Phe	Ile	Asp	Ile	Leu	Phe	Leu	Ser	Ile
1				5				10						15	
Ile	Val	Val	Asn	Ile	Asn	Met	Lys	Ser	Lys	Phe	Thr	Leu	Trp	Ser	Val
			20					25					30		
Val	Leu	Leu	Leu	Ala	Gly	Phe	Ile	Phe	Val	Gly	Cys	Asp	Asn	Glu	Arg
	35					40					45				
Thr	Glu	Asn	Ala	Ser	Asp	Phe	Gln	Thr	Gly	Ile	His	Lys	Ile	Val	Ile

50		55		60
Gln Gln Ser Gly Asp Thr	Asp Ser Phe Glu Val Ser Val Ser Ile Gly			
65	70	75	80	
Gly Ala Asp Lys Gly Gly Pro Ala Lys Leu Tyr Asn Asp Lys Gly Glu				
	85	90	95	
Tyr Ile Gly Asp Ser Tyr Ser Ala Gln Ile Arg Thr Ala Thr Met Ser				
	100	105	110	
Cys Cys Thr Asn Gly Asn Ala Phe Met Thr Cys Ala Gly Ser Val				
	115	120	125	
Ser Ser Ile Ser Glu Ala Gly Lys Arg Leu His Ile Thr Val Ile Gly				
	130	135	140	
Tyr Ile Asp Asp Lys Glu Val Asn Arg Leu Glu Lys Glu Tyr Ile Thr				
145	150	155	160	
Asp Gly Asn Thr Leu Ile Glu Thr Phe Ser Val Ser Thr Lys Glu Ile				
	165	170	175	

<210> 6745

<211> 785

<212> PRT

<213> B.fragilis

<400> 6745

Pro Val Tyr Ile Phe Ser Ser Met Thr Phe His Ala Tyr Leu Gln Tyr				
1	5	10	15	
Val Cys Leu Leu Val Val Cys Leu Cys Thr Leu Pro Ser Pro Met Glu				
	20	25	30	
Ala Arg Val Gln Ala Asp Arg Gln Ser Thr Gly Thr Arg Asp Thr Leu				
	35	40	45	
Leu Val Ile Asp Gln Glu Ser Gly Leu Pro Ile Glu Gly Ala Tyr Ile				
	50	55	60	
Leu Thr Arg Glu Arg Leu Leu Val Ser Ser Pro Arg Gly Met Ile Val				
65	70	75	80	
Phe Gly His Gly Thr Cys Phe Met Asp Thr Val Leu Val Gln Cys Leu				
	85	90	95	
Gly Tyr Gly Ser Arg Arg Val Pro Leu Asn Glu Val Phe Lys Glu Ser				
	100	105	110	
Ser Ile His Thr Val Cys Leu Ser Pro Asp Ile Gln Lys Leu Gly Glu				
	115	120	125	
Val Val Val Thr Gly Glu Arg Ala Gly Ala Ser Pro Asn Val Val Ser				
	130	135	140	
Arg Arg Leu Ser Ser Pro Glu Ile Arg Asn Ala Leu Gly Thr Ser Leu				
145	150	155	160	
Ala Thr Leu Leu Glu Arg Val Ser Gly Val Ser Ser Ile Ser Thr Gly				
	165	170	175	
Thr Thr Val Ser Lys Pro Val Ile Gln Gly Met Tyr Gly Asn Arg Ile				
	180	185	190	
Leu Ile Ile His Asn Gly Ala Arg Gln Thr Gly Gln Gln Trp Gly Ala				
	195	200	205	
Asp His Ala Pro Glu Val Asp Met Asn Gly Ser Ser Ser Val Ser Val				
	210	215	220	
Ile Lys Gly Ser Asp Ala Val Arg Tyr Gly Ser Asp Ala Leu Gly Gly				
225	230	235	240	
Ile Ile Val Met Glu Gln Ser Pro Leu Pro Phe Arg Lys Arg Ser Leu				
	245	250	255	
Gln Gly Gly Ile Ser Ala Leu Tyr Gly Ser Asn Gly Arg Arg Tyr Val				
	260	265	270	
Ala Thr Gly Gln Leu Glu Gly Ala Phe Pro Gly Asp Phe Ala Trp Arg				
	275	280	285	
Leu Gln Gly Thr Trp Ser Asn Ser Gly Asp Arg Ser Thr Ala His Tyr				

290	295	300
Leu Leu Asn Asn Thr Gly Thr Arg Glu Tyr His Ala Ser Ala Ser Leu		
305	310	315
Gly Tyr Asp Arg Gly Arg Leu Arg Val Glu Gly Phe Tyr Ser Arg Phe		320
	325	330
		335
Tyr Ser Arg Thr Gly Val Met Leu Ser Ala Gln Met Gly Ser Glu Asp		
	340	345
		350
Leu Leu Ala Glu Arg Ile Arg Leu Gly Arg Pro Leu His Thr Asp Pro		
	355	360
		365
Phe Ser Arg Gly Ile Arg Ala Pro Cys Gln Glu Val Thr His Gln Ile		
	370	375
		380
Thr Phe Gly Arg Met Arg Leu Gly Met Lys Lys Gly Gly Ser Ile His		
	385	390
		395
Trp Gln Ser Thr Trp Gln Lys Asp Asp Arg Gln Glu Asn Arg Val Arg		
	405	410
		415
Arg Leu Asp Ser Asn Ile Pro Ala Val Ser Leu His Leu Asn Ser Phe		
	420	425
		430
Gln His Leu Leu Arg Trp Lys Arg Asp Tyr Arg Ser Trp Gln Val Glu		
	435	440
		445
Ala Gly Gly Gln Val Met Phe Ile Glu Asn His Ser Arg Ala Gly Thr		
	450	455
		460
Gly Phe Val Pro Val Ile Pro Asn Tyr Thr Glu Thr Gln Ala Gly Ile		
	465	470
		475
Tyr Gly Ile Gly Lys Tyr His Leu Ala Arg Gly Gly Val Glu Ala Gly		
	485	490
		495
Leu Arg Leu Asp Met Gln Glu Thr Arg Ala Ser Gly Tyr Asp Trp Thr		
	500	505
		510
Gly Ser Pro Tyr Gly Gly Thr Arg Lys Phe Asn Asn Val Ser Tyr Ser		
	515	520
		525
Leu Gly Gly His Tyr Gln Leu Ser Arg Arg Trp Arg Leu Thr Ser Asn		
	530	535
		540
Phe Gly Leu Ala Trp Arg Ala Pro His Val Tyr Glu Leu Tyr Ser Asn		
	545	550
		555
Gly Asn Glu Leu Gly Ser Gly Met Phe Val Arg Gly Asp Ser Ala Met		
	565	570
		575
His Ser Glu Arg Ser Tyr Lys Trp Ile Ser Ser Leu Arg Tyr Gly Asp		
	580	585
		590
Gly Met Phe Ser Val Cys Leu Asp Gly Tyr Leu Gln Trp Val Asp Gly		
	595	600
		605
Tyr Ile Tyr Asp Gly Pro Glu Lys Glu Thr Val Thr Val Ile Ser Gly		
	610	615
		620
Ala Tyr Pro Val Phe Gln Tyr Arg Gln Thr Pro Ala Phe Phe Arg Gly		
	625	630
		635
Met Asp Phe Asp Leu Arg Phe Thr Pro Gly Gly Ser Trp Asp Tyr His		
	645	650
		655
Ala Val Val Ser Phe Ile Arg Ala Asn Glu Arg Thr Lys Gly Asn Tyr		
	660	665
		670
Leu Pro Tyr Ile Pro Ser Phe Arg Phe Ser His Glu Leu Ala Trp Ile		
	675	680
		685
His Glu Thr Lys Ser His Leu Arg Leu Arg Leu Asn Ile Arg His Arg		
	690	695
		700
Phe Thr Ala Lys Gln Arg Arg Phe Asp Pro Asp Thr Asp Leu Ile Pro		
	705	710
		715
Tyr Thr Pro Pro Ala Tyr His Leu Leu Gly Phe Asp Ala Ala Leu Glu		
	725	730
		735
Leu Pro Val Lys Arg Gly His Gln Val Arg Phe Met Leu Ser Ala Asp		
	740	745
		750
Asn Leu Leu Asn Arg Glu Tyr Lys Glu Tyr Thr Asn Arg Ser Arg Tyr		
	755	760
		765

290 295 300
 305 310 315
 320 325 330
 335 340 345
 350 355 360
 365 370 375
 380 385 390
 395 400 405
 410 415 420
 425 430 435
 440 445 450
 455 460 465
 470 475 480
 485 490 495
 500 505 510
 515 520 525
 530 535 540
 545 550 555
 560 565 570
 575 580 585
 590 595 600
 605 610 615
 620 625 630
 635 640 645
 650 655 660
 665 670 675
 680 685 690
 695 700 705
 710 715 720
 725 730 735
 740 745 750
 755 760 765

Tyr Ala His Asp Met Gly Arg Asp Val Arg Cys Gly Val Asn Trp Ile
 770 775 780

Phe
 785

<210> 6746
 <211> 138
 <212> PRT
 <213> B.fragilis

<400> 6746

Arg Ile Gly Ile Met Asn Ile Leu Lys Leu Gln Gly Leu Asp Gly Arg
 1 5 10 15
 Leu Phe Asp Leu Val Ala Pro Leu Val Met Asn Pro Ala Val Leu Arg
 20 25 30
 Gln Asn Asn Asn Tyr Pro Phe Lys Thr Thr Arg Asn His Val Trp Tyr
 35 40 45
 Ile Ala Met Asp Glu Gln Arg Val Leu Gly Phe Met Pro Val Lys Met
 50 55 60
 Thr Leu Thr Asn Asn Cys Ile Asp Asn Tyr Tyr Ile Ser Gly Asp Asn
 65 70 75 80
 Ser Ser Val Ile Glu Val Leu Leu Asp Arg Ile Ile His Asp Phe Ser
 85 90 95
 Ser Asp Gly Ser Leu Val Ala Val Val His Glu Arg His Val Glu Asp
 100 105 110
 Phe Ser Met Lys Asn Phe Ile Pro Cys Val Glu Trp Lys Lys Tyr Val
 115 120 125
 Lys Met Arg Tyr His Glu Gly Gly Gly Ala
 130 135

<210> 6747
 <211> 177
 <212> PRT
 <213> B.fragilis

<400> 6747

Ile Val Ile Val Met Ser Ser Phe Lys Ser Pro Ala Tyr Asn Val Lys
 1 5 10 15
 Ala Val Pro Val Glu Lys Ile Val Ala Asn Ser Tyr Asn Pro Asn Val
 20 25 30
 Val Ala Pro Pro Glu Met Lys Leu Leu Glu Leu Ser Ile Trp Glu Asp
 35 40 45
 Gly Tyr Thr Met Pro Leu Val Cys Tyr Tyr Arg Glu Glu Glu Asp Ile
 50 55 60
 Tyr Glu Leu Val Asp Gly Tyr His Arg Tyr Leu Val Met Lys Thr Ser
 65 70 75 80
 Val Arg Ile Tyr Lys Arg Glu Asn Gly Leu Leu Pro Val Thr Val Ile
 85 90 95
 Asn Lys Asp Ile Ser Asn Arg Met Ala Ser Thr Ile Arg His Asn Arg
 100 105 110
 Ala Arg Gly Met His Ser Leu Glu Leu Met Thr Gly Ile Val Ala Glu
 115 120 125
 Leu Ser Lys Ser Gly Met Ser Asp Ser Trp Ile Met Arg Asn Ile Gly
 130 135 140
 Met Asp Lys Asn Glu Leu Arg Phe Lys Gln Ile Ser Gly Leu Ala
 145 150 155 160
 Glu Leu Phe Arg Asp Arg Ser Phe Gly Leu Ser Asp Asp Trp Leu Glu
 165 170 175

Glu

<400> 6748

<210> 6749

<400> 6749

[illegible]

Asp Arg Tyr Gln Leu Val Thr Ala Gln Ala Thr Leu Gln Asp Tyr Lys
 260 265 270
 Leu Gln Leu Lys Gln Leu Leu Glu Leu Asp Gly Glu Gln Glu Met Gln
 275 280 285
 Val Tyr Leu Pro Ala Leu Gly Asp Glu Asn Val Leu Ser Pro Leu Pro
 290 295 300
 Thr Lys Thr Asp Val Phe Arg Ser Ala Val Ala Leu Arg Pro Glu Ile
 305 310 315 320
 Glu Ala Ser Lys Leu Ser Val Glu Ala Ser Glu Leu Gly Ile Gly Ile
 325 330 335
 Ala Lys Ser Gly Tyr Leu Pro Ser Val Ser Leu Thr Ala Gly Ile Gly
 340 345 350
 Thr Asn His Thr Ser Gly Ser Asp Phe Thr Phe Gly Glu Gln Val Lys
 355 360 365
 Asn Gly Trp Asn Asn Ser Ile Gly Leu Ser Ile Ser Val Pro Ile Phe
 370 375 380
 Asn Asn Arg Gln Thr Lys Ser Ala Val Glu Lys Ala Lys Leu Gln Tyr
 385 390 395 400
 Gln Thr Ser Gln Leu Thr Leu Leu Asp Glu Gln Lys Thr Leu Tyr Lys
 405 410 415
 Thr Ile Glu Gly Leu Trp Leu Asp Ala Asn Ser Ala Gln Gln Arg Tyr
 420 425 430
 Ala Ala Ala Ile Glu Lys Leu His Ser Thr Gln Thr Ser Tyr Glu Leu
 435 440 445
 Val Ser Glu Gln Phe Asn Ala Gly Met Lys Asn Thr Val Glu Leu Leu
 450 455 460
 Thr Glu Lys Asn Asn Leu Leu Gln Ala Gln Gln Glu Leu Leu Gln Ser
 465 470 475 480
 Lys Tyr Met Ala Ile Leu Asn Thr Gln Leu Leu Lys Phe Tyr Gln Gly
 485 490 495
 Asp Lys Ile Thr Leu
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<210> 6750
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 6750
 Lys Lys Arg Pro Thr Phe Thr Gly Arg Thr Phe Phe Val Leu Phe Glu
 1 5 10 15
 Tyr Val Ile Tyr Ile Gln Gln Leu Asn Ser Met Ile Ile Lys Ile Thr
 20 25 30
 Thr Gln Gln Asn Gly Ile Arg Glu Asn His Phe Gly Arg Ile Gly Leu
 35 40 45
 Ser His Leu Asn Val Thr Tyr Val Ile Ile Met Thr Asn
 50 55 60

<210> 6751
 <211> 518
 <212> PRT
 <213> B.fragilis

<400> 6751
 Gly Lys Asn Pro Ala Phe Asn Leu Lys Arg Gly Ser Leu Tyr Pro Ile
 1 5 10 15
 Ser Gly Val Phe Ser Gln Ala Cys Asp Glu Ile Gly Met Leu Phe Trp
 20 25 30
 Ala Glu Asn Ala Phe Trp Gly Ile Gly Gly His Lys Gly Asp Asp Tyr

		35					40					45				
Trp	Asn	Ala	Ser	Ala	Tyr	Pro	Val	Asn	Glu	Ser	Asp	Arg	Ala	Glu	Phe	
	50					55					60					
Glu	Asn	Ser	Val	Lys	Ala	Gln	Leu	Lys	Glu	Leu	Ile	Arg	Ile	His	Arg	
65				70						75				80		
Asn	His	Pro	Ser	Ile	Ile	Val	Trp	Ser	Met	Ser	Asn	Glu	Pro	Phe	Phe	
				85					90					95		
Thr	Ala	Pro	Glu	Thr	Ile	Asp	Pro	Met	Arg	Lys	Leu	Leu	Glu	Glu	Thr	
			100					105					110			
Val	Lys	Leu	Ser	Lys	Gln	Leu	Asp	Pro	Thr	Arg	Pro	Ala	Ala	Val	Gly	
		115					120					125				
Gly	Ala	Gln	Arg	Pro	Leu	Gly	Glu	Lys	Arg	Ile	Asp	Lys	Leu	Gly	Asp	
	130					135					140					
Ile	Ala	Gly	Tyr	Asn	Gly	Asp	Gly	Ser	Tyr	Ile	Pro	Glu	Phe	Gln	Gln	
145				150						155				160		
Pro	Gly	Met	Pro	Thr	Val	Val	Ser	Glu	Tyr	Gly	Ser	Thr	Thr	Ala	Asp	
				165					170					175		
Arg	Pro	Gly	Glu	Tyr	Asp	Pro	Gly	Trp	Gly	Asp	Leu	Ala	Lys	Asn	Asn	
			180					185					190			
Ala	Gln	Asn	Gly	Phe	Pro	Trp	Arg	Ser	Gly	Gln	Ala	Ile	Trp	Cys	Ala	
		195					200					205				
Phe	Asp	His	Gly	Ser	Ile	Ala	Gly	Ser	Ala	Leu	Gly	Lys	Met	Gly	Ile	
	210					215					220					
Ile	Asp	Tyr	Phe	Arg	Ile	Pro	Lys	Arg	Ala	Trp	Tyr	Trp	Tyr	Arg	Asn	
225				230						235				240		
Ala	Tyr	Lys	Gly	Ile	Thr	Pro	Pro	Glu	Trp	Pro	Gln	Glu	Gly	Thr	Pro	
				245					250					255		
Ala	Arg	Ile	Ser	Leu	Val	Ala	Asp	Arg	Thr	Asp	Asn	Ile	Lys	Ala	Asp	
			260					265					270			
Gly	Thr	Asp	Asp	Val	Met	Leu	Ser	Ile	Thr	Ile	Leu	Asp	Ala	Asn	Gly	
		275					280					285				
Lys	Pro	Val	Ser	Asn	Ser	Pro	Ala	Val	Lys	Leu	Asp	Ile	Leu	Ser	Gly	
	290					295					300					
Pro	Gly	Glu	Phe	Pro	Thr	Gly	Thr	Ser	Ile	Leu	Phe	Glu	Lys	Glu	Ser	
305				310						315				320		
Asp	Ile	Arg	Ile	Leu	Asp	Gly	Lys	Ala	Ala	Ile	Glu	Phe	Arg	Ser	Tyr	
				325					330					335		
Tyr	Ala	Gly	Glu	Thr	Val	Ile	Arg	Ala	Thr	Ser	Pro	Gly	Leu	Glu	Pro	
			340					345					350			
Ala	Glu	Val	Lys	Ile	Arg	Phe	Thr	Gly	Ser	Thr	Pro	Tyr	Thr	Glu	Ala	
		355					360					365				
Phe	Lys	Val	Lys	Glu	Arg	Pro	Tyr	Thr	Arg	Phe	Glu	Thr	Pro	Thr	Lys	
	370					375					380					
Thr	Asp	Asn	Leu	Gln	Thr	Phe	Gly	Pro	Asn	Asn	Pro	Thr	Phe	Cys	Ser	
385				390						395				4		

Ile Gly Thr Val Ile Asp
515

<210> 6752

<211> 496

<212> PRT

<213> B.fragilis

<400> 6752

Ile	His	Ile	Thr	Ile	Met	Ala	Thr	Gln	Asn	Lys	Thr	Asp	Ile	Gly	Leu
1				5					10					15	
Ile	Gly	Leu	Ala	Val	Met	Gly	Glu	Asn	Leu	Ala	Leu	Asn	Met	Glu	Ser
			20					25					30		
Arg	Gly	Trp	Ser	Val	Ser	Val	Tyr	Asn	Arg	Thr	Val	Pro	Gly	Val	Glu
		35					40					45			
Glu	Gly	Val	Val	Glu	Arg	Phe	Ile	Asn	Gly	Arg	Ala	Lys	Gly	Lys	His
	50					55					60				
Ile	Glu	Gly	Phe	Thr	Asp	Ile	Glu	Ala	Phe	Val	Glu	Ser	Ile	Ala	Leu
65					70					75				80	
Pro	Arg	Lys	Ile	Met	Met	Met	Val	Arg	Ala	Gly	Ser	Pro	Val	Asp	Glu
				85					90					95	
Leu	Met	Glu	Gln	Leu	Phe	Pro	Tyr	Leu	Ser	Pro	Gly	Asp	Ile	Leu	Ile
			100					105					110		
Asp	Gly	Gly	Asn	Ser	Asn	Tyr	Glu	Asp	Thr	Asn	Arg	Arg	Val	Lys	Leu
		115					120					125			
Ala	Glu	Ser	Lys	Gly	Phe	Leu	Phe	Val	Gly	Ala	Gly	Val	Ser	Gly	Gly
	130					135					140				
Glu	Glu	Gly	Ala	Leu	Asn	Gly	Ala	Ser	Ile	Met	Pro	Gly	Gly	Ser	Glu
145					150					155					160
Lys	Ala	Trp	Glu	Glu	Val	Lys	Pro	Ile	Leu	Gln	Ser	Ile	Ala	Ala	Gln
				165					170					175	
Ala	Pro	Asp	Gly	Thr	Pro	Cys	Cys	Gln	Trp	Val	Gly	Pro	Ala	Gly	Ser
			180					185					190		
Gly	His	Phe	Val	Lys	Met	Ile	His	Asn	Gly	Ile	Glu	Tyr	Gly	Asp	Met
	195						200					205			
Gln	Leu	Ile	Ala	Glu	Ala	Tyr	Trp	Val	Met	Lys	Glu	Leu	Leu	Asp	Met
210						215					220				
Thr	Asn	Glu	Glu	Met	Ala	Ser	Val	Phe	Thr	Arg	Trp	Asn	Glu	Gly	Lys
225					230					235					240
Leu	Arg	Ser	Tyr	Leu	Ile	Glu	Ile	Thr	Gly	Asn	Ile	Leu	Arg	His	Lys
				245					250					255	
Asp	Lys	Thr	Gly	Val	Tyr	Leu	Ile	Asp	Lys	Ile	Leu	Asp	Ala	Ala	Gly
			260					265					270		
Gln	Lys	Gly	Thr	Gly	Lys	Trp	Ser	Val	Ile	Asn	Ala	Met	Glu	Leu	Gly
		275					280					285			
Met	Pro	Leu	Gly	Leu	Ile	Ala	Thr	Ala	Val	Phe	Glu	Arg	Ser	Leu	Ser
	290					295					300				
Ala	Arg	Lys	Glu	Leu	Arg	Glu	Ala	Ala	Ala	Arg	Gln	Tyr	Gln	Cys	Arg
305					310					315					320
His	Ser	Met	Ala	Val	Tyr	Asn	Lys	Gln	Asp	Thr	Glu	Lys	Glu	Ile	Phe
			325						330					335	
Ser	Ala	Leu	Tyr	Ala	Ser	Lys	Leu	Val	Ser	Tyr	Ala	Gln	Gly	Phe	Ala
		340						345					350		
Val	Leu	Gln	Arg	Ala	Ser	Asp	Thr	Phe	Gly	Trp	Asn	Leu	Asp	Leu	Ala
	355						360					365			
Ser	Ile	Ala	Arg	Met	Trp	Arg	Gly	Gly	Cys	Ile	Ile	Arg	Ser	Val	Phe
	370					375					380				
Leu	Asn	Asp	Ile	Ala	Ala	Ala	Phe	Glu	Ala	Lys	Glu	Lys	Pro	Lys	His
385					390					395					400

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Leu Leu Leu Ala Pro Tyr Phe Glu Glu Glu Ile Lys Gly Leu Leu Ser
 405 410 415
 Gly Trp Lys Asn Leu Val Ala Gln Ala Met Arg Glu Glu Leu Pro Val
 420 425 430
 Pro Ala Phe Ser Ser Ala Leu Asn Tyr Phe Tyr Ser Leu Val Ser Ala
 435 440 445
 Asp Leu Pro Ala Asn Leu Val Gln Ala Gln Arg Asp Tyr Phe Gly Ala
 450 455 460
 His Thr Phe Glu Arg Lys Asp Glu Leu Arg Gly Val Phe Phe His Glu
 465 470 475 480
 Asn Trp Thr Gly His Gly Gly Asp Thr Lys Ser Gly Thr Tyr Asn Val
 485 490 495

<210> 6753

<211> 136

<212> PRT

<213> B.fragilis

<400> 6753

Ser Gly Ser Thr Gln Val Trp His Val His Cys Ile Thr Ile Phe Arg
 1 5 10 15
 Cys Leu Val Ile Val Ser Arg Ser Arg Thr Ile Lys Phe Ser Arg Ile
 20 25 30
 Met Lys Lys Val Leu Val Ala Leu Val Ile Val Met Gly Leu Gly Phe
 35 40 45
 Ser Val Ala Lys Ala Asp Glu Pro Leu Lys Lys Lys Ser Pro Lys Val
 50 55 60
 Glu Gln Arg Asp Ser Arg Glu Asp Phe Thr Pro Ile Glu Val Asn Asn
 65 70 75 80
 Leu Pro Glu Ala Val Ile Asp Glu Leu Ser Cys Glu Gly Ala Leu Ile
 85 90 95
 Lys Glu Ala Phe Ile Ala Tyr Ser Arg Ser Glu Gly Lys Leu Tyr Lys
 100 105 110
 Val Ile Ile Leu Ser Ser Asp Phe His Glu Gln Ala Val Phe Leu Asn
 115 120 125
 Glu Arg Gly Asn Ile Leu Asn Arg
 130 135

<210> 6754

<211> 74

<212> PRT

<213> B.fragilis

<400> 6754

Lys Ala Cys Thr Gln Gly His Gly Val Asp Gln Glu Glu Glu Val Ser
 1 5 10 15
 Pro Asn Gln Val Ala Ala Leu Arg Cys Leu Phe Thr Pro Glu Tyr Thr
 20 25 30
 Arg Pro Ala Ala Ile Gly Thr Thr Arg Ala Leu Leu Gln Gly Val Glu
 35 40 45
 Phe Gln Lys Val Ser Ala Ile Gly Gly Ala Ile Asn Gly Gly Ser Gly
 50 55 60
 Ser Gly Asp Ile Val Asp Asp Pro Thr Ala
 65 70

<210> 6755

<211> 383

<212> PRT

<213> B.fragilis

<400> 6755

Thr Met Gly Thr Tyr Ile Phe Leu Gln Gln Tyr Trp Trp Leu Val Val
 1 5 10 15
 Ser Leu Leu Gly Ala Ile Leu Val Phe Leu Leu Phe Val Gln Gly Gly
 20 25 30
 Asn Ser Leu Leu Phe Cys Leu Gly Lys Thr Glu Glu His Arg Lys Met
 35 40 45
 Met Val Asn Ser Thr Gly Arg Lys Trp Glu Phe Thr Phe Thr Thr Leu
 50 55 60
 Val Thr Phe Gly Gly Ala Phe Phe Ala Ser Phe Pro Leu Phe Tyr Ser
 65 70 75 80
 Thr Ser Phe Gly Gly Ala Tyr Trp Leu Trp Met Ile Ile Leu Phe Ser
 85 90 95
 Phe Val Leu Gln Ala Val Ser Tyr Glu Phe Gln Ser Lys Ala Gly Asn
 100 105 110
 Leu Leu Gly Lys Lys Thr Tyr Gln Thr Phe Leu Val Ile Asn Gly Val
 115 120 125
 Val Gly Pro Leu Leu Leu Gly Gly Ala Val Ala Thr Phe Phe Thr Gly
 130 135 140
 Ser Asp Phe Tyr Ile Asn Lys Gly Asn Met Val Asn Glu Val Met Pro
 145 150 155 160
 Val Ile Ser His Trp Gly Asn Gly Trp His Gly Leu Asp Ala Leu Thr
 165 170 175
 Asn Ile Trp Asn Val Ile Leu Gly Leu Ala Val Phe Phe Leu Ala Arg
 180 185 190
 Ala Leu Gly Ala Leu Tyr Phe Ile Asn Asn Ile Ala Asp Lys Glu Leu
 195 200 205
 Val Ala Lys Cys Arg Arg Ser Leu Ile Ala Asn Thr Val Leu Phe Leu
 210 215 220
 Val Phe Phe Leu Ala Phe Val Val Arg Thr Leu Leu Ala Asp Gly Tyr
 225 230 235 240
 Ala Val Asn Pro Glu Thr Lys Glu Ile Tyr Met Glu Pro Tyr Lys Tyr
 245 250 255
 Phe Asn Asn Phe Ile Glu Met Pro Val Val Leu Ile Val Phe Leu Val
 260 265 270
 Gly Val Val Leu Val Leu Phe Gly Ile Gly Lys Thr Leu Leu Lys Lys
 275 280 285
 Thr Phe Asp Lys Gly Ile Trp Phe Val Gly Ile Gly Thr Val Leu Thr
 290 295 300
 Val Leu Ala Leu Leu Leu Thr Ala Gly Tyr Asn Asn Thr Ala Tyr Tyr
 305 310 315 320
 Pro Ser Asn Thr Asp Ile Gln Ser Ser Leu Thr Leu Ala Asn Ser Cys
 325 330 335
 Ser Ser Gln Phe Thr Leu Lys Thr Met Ala Tyr Val Ser Ile Leu Val
 340 345 350
 Pro Phe Val Ile Ala Tyr Ile Phe Tyr Ala Trp Arg Ser Ile Asp Asn
 355 360 365
 Arg Lys Ile Asp Ala Lys Glu Met Asp Glu Gly Gly His Ala Tyr
 370 375 380

<210> 6756

<211> 62

<212> PRT

<213> B.fragilis

<400> 6756

Ile Thr Arg Phe Pro Ser Asn Tyr Ile Leu Asp Phe Ile Phe Ile Ser
 1 5 10 15

Ser Lys Ile Met Leu Ile Tyr Asn His Phe Met Ile Val Ser Tyr Phe
 20 25 30
 Lys Thr Thr Asp Lys Ile Ile Tyr Phe Phe Thr Phe Leu Phe Asn Leu
 35 40 45
 Phe Trp Val Ser Met Pro Leu Ala Ser Asn Val Phe Ile Val
 50 55 60

<210> 6757

<211> 236

<212> PRT

<213> B.fragilis

<400> 6757

Ser Ser Ile Ala Val Lys Leu Arg Cys Ala Ile Val Asp Asp Glu Pro
 1 5 10 15
 Leu Ala Leu Ser Leu Leu Glu Ser Tyr Val Asn Lys Thr Pro Phe Leu
 20 25 30
 Glu Leu Ala Gly Lys Tyr Ser Ser Ala Val Gln Ala Met Lys Glu Leu
 35 40 45
 Pro Gly Asn Gln Ile Asp Leu Leu Phe Leu Asp Ile Gln Met Pro Glu
 50 55 60
 Leu Asn Gly Leu Glu Phe Ser Lys Met Val Ala Pro Arg Thr Arg Ile
 65 70 75 80
 Val Phe Thr Thr Ala Phe Gly Gln Tyr Ala Ile Asp Gly Tyr Arg Val
 85 90 95
 Asn Ala Leu Asp Tyr Leu Leu Lys Pro Ile Ser Tyr Val Asp Phe Leu
 100 105 110
 Gln Ala Ala Asn Lys Ala Leu Gln Trp Phe Glu Leu Val Gln Lys Pro
 115 120 125
 Glu Glu Val Asp Ser Ile Phe Val Lys Ser Asp Tyr Lys Leu Val Gln
 130 135 140
 Val Glu Leu Lys Lys Ile Leu Tyr Ile Glu Gly Leu Lys Asp Tyr Ile
 145 150 155 160
 Lys Ile Tyr Thr Glu Asp Ala Pro Lys Pro Ile Leu Ser Leu Met Ser
 165 170 175
 Met Lys Ser Met Glu Glu Leu Leu Pro Pro Ala Arg Phe Met Arg Val
 180 185 190
 His Arg Ser Phe Ile Val Gln Lys Asn Lys Ile Arg Ile Ile Asp Arg
 195 200 205
 Gly Arg Ile Val Phe Asp Lys Thr Tyr Ile Pro Val Ser Asp Ser Tyr
 210 215 220
 Lys Gln Thr Phe Gln Thr Phe Leu Asp Glu Arg Ser
 225 230 235

<210> 6758

<211> 450

<212> PRT

<213> B.fragilis

<400> 6758

Pro Asn Thr Ala Ala Val Thr Ser Cys Cys Ala Thr Asp Lys Ser Arg
 1 5 10 15
 Lys Thr Ala Leu Thr Arg Thr Phe Phe Pro Gln Pro Lys His Trp Pro
 20 25 30
 Leu Cys Arg Tyr Lys Lys Asn Asn Arg Gln Ile Ile Met Asn Gly Thr
 35 40 45
 Asn Leu Phe Lys Ile Ala Leu Arg Ala Leu Asn Asn Asn Lys Leu Arg
 50 55 60
 Ala Phe Leu Thr Met Leu Gly Ile Ile Ile Gly Val Ala Ser Val Ile

65 70 75 80
 Thr Met Leu Ala Ile Gly Gln Gly Ser Lys Lys Ser Ile Gln Ala Gln
 85 90 95
 Ile Ser Glu Met Gly Ser Asn Met Ile Met Ile His Pro Gly Ala Asp
 100 105 110
 Met Arg Gly Gly Val Arg Gln Asp Pro Ser Ala Met Gln Thr Leu Lys
 115 120 125
 Leu Thr Asp Tyr Glu Thr Leu Arg Asp Glu Thr Ser Phe Leu Ala Ala
 130 135 140
 Val Ser Pro Asn Val Ser Ser Ser Gly Gln Leu Ile Ala Gly Asn Asn
 145 150 155 160
 Asn Tyr Pro Ser Ser Val Asn Gly Val Gly Thr Glu Tyr Leu Glu Ile
 165 170 175
 Arg Gln Leu Ser Ile Asp Asn Gly Glu Met Phe Ser Glu Ala Asp Ile
 180 185 190
 Gln Ser Ser Ala Lys Val Cys Val Ile Gly Lys Thr Ile Val Asp Asn
 195 200 205
 Leu Phe Pro Asp Gly Glu Asp Pro Val Gly Arg Ile Val Arg Phe Ser
 210 215 220
 Lys Ile Pro Phe Arg Val Val Gly Val Leu Lys Ser Lys Gly Tyr Asn
 225 230 235 240
 Ser Met Gly Met Asp Gln Asp Asp Ile Val Leu Ala Pro Tyr Thr Thr
 245 250 255
 Val Met Lys Arg Leu Leu Ala Gln Thr Tyr Leu Gln Gly Ile Tyr Ala
 260 265 270
 Ser Ala Leu Ser Glu Asp Met Thr Asp Asn Ala Thr Glu Glu Ile Thr
 275 280 285
 Glu Leu Leu Arg Arg Asn His Lys Leu Lys Glu Ala Asp Asp Asp Asp
 290 295 300
 Phe Thr Ile Arg Ser Gln Gln Glu Leu Ser Ser Met Leu Asn Ser Thr
 305 310 315 320
 Thr Asp Leu Met Thr Thr Leu Leu Ala Cys Ile Ala Gly Ile Ser Leu
 325 330 335
 Val Val Gly Gly Ile Gly Ile Met Asn Ile Met Tyr Val Ser Val Thr
 340 345 350
 Glu Arg Thr Arg Glu Ile Gly Leu Arg Met Ser Val Gly Ala Arg Gly
 355 360 365
 Val Asp Ile Leu Ser Gln Phe Leu Ile Glu Ala Ile Leu Ile Ser Ile
 370 375 380
 Thr Gly Gly Leu Ile Gly Val Ile Ile Gly Cys Gly Ala Ser Trp Val
 385 390 395 400
 Val Lys Ser Val Ala His Trp Pro Ile Phe Ile Gln Pro Trp Ser Val
 405 410 415
 Phe Leu Ser Phe Ala Val Cys Thr Val Thr Gly Val Phe Phe Gly Trp
 420 425 430
 Tyr Pro Ala Lys Lys Ala Ala Asp Leu Asp Pro Ile Glu Ala Ile Arg
 435 440 445
 Tyr Glu
 450

<210> 6759

<211> 84

<212> PRT

<213> B.fragilis

<400> 6759

Val Val Asn Leu Arg Lys Asn Lys Ser Lys Met Glu Tyr Lys Phe Asp
 1 5 10 15
 Glu Gln Ser Val Lys Glu Leu Met Glu Trp Ala Gln Thr Ala Gln Leu

20	25	30
Pro Gln Glu Leu Glu Leu Ser Lys	Ala Glu Arg Ile Phe Asp Val Lys	
35	40	45
Leu Cys Ile Glu Ser Asp Leu Ser Cys Ile Arg Ala His Tyr Pro Asp		
50	55	60
Ala Phe Tyr Asn Pro Ala Ile Thr Arg Leu Tyr Arg Ile Arg Glu Lys		
65	70	75
Leu Glu Glu Lys		80

<210> 6760

<211> 429

<212> PRT

<213> B.fragilis

<400> 6760

Gln Ile Tyr Tyr Lys Tyr Met Gln Pro Leu Ala Glu Arg Leu Arg Pro	
1	5 10 15
Lys Thr Leu Asp Asp Tyr Ile Gly Gln Lys His Leu Val Gly Pro Gly	
20	25 30
Ala Ile Leu Arg Lys Met Ile Asp Ala Gly Arg Ile Ser Ser Phe Ile	
35	40 45
Leu Trp Gly Pro Pro Gly Val Gly Lys Thr Thr Leu Ala Gln Ile Ile	
50	55 60
Ala Asn Lys Leu Glu Thr Pro Phe Tyr Thr Leu Ser Ala Val Thr Ser	
65	70 75 80
Gly Val Lys Asp Val Arg Glu Val Ile Asp Arg Ala Lys Ser Asn Lys	
85	90 95
Phe Phe Thr Gln Ser Ser Pro Ile Leu Phe Ile Asp Glu Ile His Arg	
100	105 110
Phe Ser Lys Ser Gln Gln Asp Ser Leu Leu Gly Ala Val Glu His Gly	
115	120 125
Thr Val Thr Leu Ile Gly Ala Thr Thr Glu Asn Pro Ser Phe Glu Val	
130	135 140
Ile Arg Pro Leu Leu Ser Arg Cys Gln Leu Tyr Thr Leu Lys Ser Leu	
145	150 155 160
Glu Lys Glu Asp Leu Leu Glu Leu Leu Gln Arg Ala Ile Thr Thr Asp	
165	170 175
Val Val Leu Lys Glu Arg Lys Ile Glu Leu Lys Glu Thr Gly Ala Met	
180	185 190
Leu Arg Phe Ser Gly Gly Asp Ala Arg Lys Leu Leu Asn Ile Leu Glu	
195	200 205
Leu Val Val Glu Ser Glu Thr Glu Glu Thr Val Ile Ile Thr Asp Asp	
210	215 220
Leu Val Thr Glu Arg Leu Gln Gln Asn Pro Leu Ala Tyr Asp Lys Asp	
225	230 235 240
Gly Glu Met His Tyr Asp Ile Ile Ser Ala Phe Ile Lys Ser Ile Arg	
245	250 255
Gly Ser Asp Pro Asp Gly Ala Ile Tyr Trp Leu Ala Arg Met Val Glu	
260	265 270
Gly Gly Glu Asp Pro Ala Phe Ile Ala Arg Arg Leu Val Ile Ser Ala	
275	280 285
Ala Glu Asp Ile Gly Leu Ala Asn Pro Asn Ala Leu Leu Ala Asn	
290	295 300
Ala Cys Phe Asp Thr Leu Met Lys Ile Gly Trp Pro Glu Gly Arg Ile	
305	310 315 320
Pro Leu Ala Glu Thr Thr Ile Tyr Leu Ala Thr Ser Pro Lys Ser Asn	
325	330 335
Ser Ala Tyr Asn Ala Ile Asn Asp Ala Leu Ala Leu Val Arg Glu Thr	

[illegible]

<400> 6761

Arg 1	Leu	Thr	Leu	Thr 5	Thr	Asn	Asp	Met	Ile 10	Glu	Ser	Ile	Asp	Thr 15	Ser
Leu	Ile	Asp	Trp 20	Ser	Arg	Ala	Gln	Phe 25	Ala	Leu	Thr	Ala	Met 30	Tyr	His
Trp	Ile	Phe 35	Val	Pro	Leu	Thr	Leu	Gly 40	Leu	Ala	Val	Val	Met 45	Ala	Ile
Met	Glu 50	Thr	Leu	Tyr	Tyr	Lys 55	Thr	Gly	Asn	Glu	Phe 60	Trp	Lys	Arg	Thr
Ala 65	Lys	Phe	Trp	Met	Lys 70	Leu	Phe	Gly	Ile	Asn 75	Phe	Ala	Val	Gly	Val 80
Ala	Thr	Gly	Leu	Ile 85	Leu	Glu	Phe	Glu	Phe 90	Gly	Thr	Asn	Trp	Ser 95	Asn
Tyr	Ser	Trp	Phe 100	Val	Gly	Asp	Ile	Phe 105	Gly	Ala	Pro	Leu	Ala 110	Ile	Glu
Gly	Ile	Leu	Ala 115	Phe	Phe	Met	Glu	Ala 120	Thr	Phe	Ile	Ala 125	Val	Met	Phe
Phe	Gly 130	Trp	Asp	Lys	Val	Ser 135	Lys	Arg	Phe	His 140	Leu	Ile	Ser	Thr	Trp
Leu 145	Thr	Gly	Leu	Gly	Ala 150	Thr	Ile	Ser	Ala	Trp 155	Trp	Ile	Leu	Val	Ala 160
Asn	Ala	Trp	Met	Gln 165	His	Pro	Val	Gly	Met 170	Gln	Phe	Asn	Pro	Asp 175	Thr
Val	Arg	Asn	Glu 180	Met	Val	Asp	Phe	Met 185	Ala	Val	Ala	Phe	Ser 190	Pro	Val
Ala	Val	Asn 195	Lys	Phe	Phe	His 200	Thr	Val	Leu	Ser	Ser	Trp 205	Val	Leu	Gly
Ala	Val 210	Phe	Val	Ile	Gly	Ile 215	Ser	Cys	Trp	Phe 220	Leu	Leu	Lys	Lys	Arg
Asp 225	Lys	Glu	Phe	Ala 230	Val	Ala	Ser	Ile	Lys	Ile 235	Gly	Ala	Val	Phe	Gly 240
Leu	Val	Ala	Ser	Leu 245	Leu	Thr	Val	Trp	Thr 250	Gly	Asp	Gly	Ser	Gly 255	Tyr
Ala	Ile	Ala	Gln 260	Thr	Gln	Pro	Met	Lys 265	Leu	Ala	Ala	Val	Glu 270	Gly	Tyr
Tyr	Glu	Gly	Gln 275	Asn	Gly	Ala	Gly	Leu 280	Val	Ala	Val	Gly	Leu	Leu	Asn
Pro	Glu 290	Lys	Lys	Thr	Tyr	Asp 295	Asp	Gly	Gln	Asp 300	Pro	Phe	Leu	Phe	Arg
Ile 305	Glu	Ile	Pro	Lys	Met 310	Leu	Ser	Leu	Leu 315	Ala	Glu	Arg	Lys	Val	Asp 320
Ala	Phe	Val	Pro	Gly	Ile	Lys	Asn	Ile	Ile	Glu	Gly	Gly	Tyr	Glu	Leu

[illegible]

<400> 6762

<400> 6763

Ile Tyr Arg Leu Gly Asn Ser Asp Leu Tyr His Gln Lys Glu Gln Glu
1 5 10 15

Lys Lys Ile Met Phe Gly Leu Met Asp Cys Asn Asn Phe Tyr Ala Ser
 20 25 30
 Cys Glu Arg Val Phe Asn Pro Ala Leu Asn Gly Lys Pro Ile Val Val
 35 40 45
 Leu Ser Asn Asn Asp Gly Cys Val Ile Ala Arg Ser Asn Glu Ala Lys
 50 55 60
 Ala Leu Gly Ile Lys Met Gly Val Pro Ala Tyr Gln Ile Lys Asp Asp
 65 70 75 80
 Ile Gln Lys Tyr Gly Ile Ser Val Phe Ser Ser Asn Tyr Thr Leu Tyr
 85 90 95
 Gly Asp Met Ser Gly Arg Val Met Ser Ile Leu Ala Glu Gln Val Pro
 100 105 110
 Glu Met Glu Val Tyr Ser Ile Asp Glu Ala Phe Leu Asn Leu Glu Gly
 115 120 125
 Ile Arg Asp Ile Gln Ser Leu Gly Thr Asp Ile Ile Asn Lys Val Ile
 130 135 140
 Arg Gly Thr Gly Ile Pro Val Ser Leu Gly Ile Ala Pro Thr Lys Thr
 145 150 155 160
 Leu Ala Lys Val Ala Asn Lys Phe Ala Lys Lys Tyr Pro Ala Tyr Asn
 165 170 175
 Arg Leu Cys Ile Ile Asp Thr Glu Glu Lys Arg Thr Lys Ala Leu Gln
 180 185 190
 Leu Thr Glu Ile Gly Asp Ile Trp Gly Ile Gly His Arg Gln Val Ala
 195 200 205
 Lys Leu Glu Lys Gln Gly Val Lys Thr Ala Tyr Asp Phe Thr Glu Leu
 210 215 220
 Pro Glu Ser Trp Val Arg Lys Asn Met Thr Val Val Gly Glu Arg Thr
 225 230 235 240
 Trp Lys Glu Leu Gln Gly Ile Ser Cys Ile Asp Met Glu Thr Thr Pro
 245 250 255
 Pro Ala Lys Lys Gln Ile Cys Thr Ser Arg Ser Phe Gly Lys Met Val
 260 265 270
 Glu Asp Ile Asp Thr Met Ser Glu Ala Ile Ala Thr His Ala Ser Thr
 275 280 285
 Cys Ala Lys Lys Leu Arg Gln Gln Lys Gly Tyr Ala Met Ser Leu Met
 290 295 300
 Val Phe Ile His Thr Asn Asn Phe Arg Lys Asp Ser Pro Gln Tyr Trp
 305 310 315 320
 Arg Asn Thr Val Val His Leu Pro Ile Pro Thr Asn Asp Thr Leu Glu
 325 330 335
 Ile Val His Tyr Ala Leu Ala Gly Leu Lys Thr Ile Phe Met Gln Gly
 340 345 350
 Tyr Gln Tyr Lys Lys Ala Gly Val Ile Ile Thr Glu Ile Thr Asp Ser
 355 360 365
 Thr Gln Leu Gly Leu Phe Asp Ser Val Asp Arg Glu Lys Arg Glu Arg
 370 375 380
 Leu Gln Gln Thr Ile Asp Lys Ile Asn Gly Lys His Ser Arg Leu Val
 385 390 395 400
 Lys Leu Ala Ile Gln Gly Thr Gly Arg Asn Trp Lys Leu Lys Gln Lys
 405 410 415
 Gln Leu Ser Gly His Tyr Thr Thr Asp Ile Asn Gln Ile Ile Ser Ile
 420 425 430
 Asn Cys Thr Tyr Pro Thr Ala Cys Gln Arg Lys Gln Tyr Ser
 435 440 445

<210> 6764

<211> 287

<212> PRT

<213> B.fragilis

<400> 6764

Lys	Gln	Leu	His	Met	Tyr	Lys	Asn	Ile	Leu	Ile	Leu	Gly	Arg	Gly	Ile
1				5					10					15	
Gly	Gln	Val	Met	Phe	Gln	Asn	Asn	Ala	Leu	Ser	Gly	Gly	Leu	Met	Leu
			20					25					30		
Leu	Gly	Ile	Ala	Phe	Asn	Ser	Trp	Gln	Leu	Ala	Val	Leu	Ser	Val	Leu
		35					40					45			
Gly	Thr	Val	Val	Ser	Thr	Leu	Thr	Ala	Ser	Leu	Ser	Gly	Tyr	Asp	Lys
	50					55					60				
Glu	Asp	Ile	Cys	Asn	Gly	Leu	Tyr	Gly	Phe	Asn	Gly	Thr	Leu	Val	Gly
65					70					75					80
Ile	Ala	Ile	Gly	Val	Phe	Met	Glu	Ile	Asn	Val	Thr	Ser	Ile	Leu	Leu
				85					90					95	
Leu	Ile	Ser	Gly	Ser	Ala	Phe	Ser	Thr	Trp	Val	Ala	Arg	Cys	Phe	Arg
			100					105					110		
Tyr	Gln	Asn	Arg	Val	Ser	Gly	Leu	Thr	Ala	Pro	Phe	Ile	Phe	Val	Val
		115					120					125			
Trp	Leu	Leu	Leu	Val	Gly	Cys	His	Tyr	Leu	Tyr	Pro	Ser	Leu	Leu	Leu
	130					135					140				
Ser	Ser	Ser	Leu	Glu	Lys	Pro	Glu	Leu	Thr	Met	Asp	Ile	Phe	Arg	Ser
145					150					155					160
Phe	Cys	Leu	Asn	Ile	Gly	Gln	Val	Met	Phe	Gln	Gly	Asn	Ile	Leu	Ser
				165					170					175	
Gly	Leu	Phe	Phe	Leu	Leu	Gly	Ile	Leu	Ile	Asn	Ser	Arg	Met	Asn	Ala
			180					185					190		
Leu	Tyr	Thr	Leu	Thr	Gly	Ala	Ile	Leu	Pro	Leu	Phe	Met	Ile	Leu	Tyr
		195					200					205			
Pro	His	Thr	Asp	Leu	Ala	Ala	Trp	Asn	Leu	Gly	Leu	Leu	Gly	Tyr	Asn
	210					215					220				
Gly	Val	Leu	Cys	Ala	Ile	Ala	Leu	Gly	Asp	Lys	Thr	Gly	Ile	Gly	Val
225					230					235					240
Val	Lys	Ala	Ile	Phe	Ser	Ile	Ile	Leu	Ser	Ile	Val	Leu	Gln	Leu	Thr
				245					250					255	
Gly	Met	His	Met	Gly	Ile	Val	Thr	Leu	Thr	Ala	Pro	Phe	Val	Phe	Ser
			260					265					270		
Val	Trp	Ile	Thr	Gly	Gly	Leu	Phe	Ser	Val	Phe	Arg	Ser	Lys	Ser	
		275					280					285			

<210> 6765

<211> 359

<212> PRT

<213> B.fragilis

<400> 6765

Leu	Asn	Arg	His	Thr	Met	Lys	Arg	Val	Phe	Val	Phe	Gln	Asp	Phe	Lys
1				5					10					15	
Ser	Gln	Lys	Phe	Trp	Ser	Ile	Asp	Val	Arg	Gly	Thr	Asp	Val	Ile	Val
			20					25					30		
Asn	Tyr	Gly	Lys	Leu	Gly	Thr	Asp	Gly	Gln	Thr	Gln	Val	Lys	Asn	Phe
		35					40					45			
Ser	Ser	Ala	Gly	Glu	Ala	Glu	Lys	Ala	Ala	Gly	Lys	Leu	Ile	Ala	Glu
	50					55					60				
Lys	Thr	Lys	Lys	Gly	Tyr	Val	Glu	Thr	Leu	Glu	Val	Ala	Lys	Glu	
65					70					75					80
Met	Lys	Val	Glu	Ala	Lys	Lys	Tyr	Ala	Leu	Ser	Tyr	Asp	Glu	Ala	Glu
				85					90					95	
Glu	Gly	Val	Asn	Leu	Met	Asp	Lys	Ile	Leu	Lys	Asp	Lys	Lys	Leu	Pro
			100					105					110		

Ser Leu Lys Gln Ile Thr Ile Gly Cys Trp Gly Tyr Glu Gly Glu Asp
 115 120 125
 Cys Ser Asp Ile Ala Asp Gly Ile Val Glu Asn Lys Glu Lys Phe Ala
 130 135 140
 His Phe Glu Gly Leu Phe Trp Gly Asp Ile Asp Phe Glu Glu Gln Glu
 145 150 155 160
 Ile Ser Trp Ile Glu Gln Val Asp Leu Ser Pro Val Leu Asp Ala Met
 165 170 175
 Pro Leu Leu Asn Asn Leu Lys Ile Lys Gly Thr Asn Asn Leu Ser Ile
 180 185 190
 Gly Lys Lys Pro Arg Pro Asn Leu Lys Ser Leu Glu Ile Ile Ser Gly
 195 200 205
 Gly Leu Pro Asp Ser Val Val Glu Asp Ile Leu Gly Ser Asp Leu Pro
 210 215 220
 Asn Leu Glu Lys Leu Val Leu Tyr Val Gly Val Glu Asp Tyr Gly Phe
 225 230 235 240
 Asp Gly Asp Met Asn Val Phe Arg Pro Leu Phe Ser Lys Asp Arg Phe
 245 250 255
 Pro Asn Leu Lys Trp Leu Gly Ile Val Asp Ala Glu Glu Gln Asn Ala
 260 265 270
 Val Val Glu Met Phe Leu Glu Ser Asp Ile Leu Pro Gln Leu Glu Thr
 275 280 285
 Met Asp Ile Ser Ala Gly Val Leu Thr Asp Glu Gly Ala Arg Leu Leu
 290 295 300
 Leu Asp His Val Asp Lys Ile Lys His Leu Lys Phe Ile Asn Met Lys
 305 310 315 320
 Tyr Asn Tyr Leu Ser Asp Glu Met Lys Lys Glu Leu Gln Lys Ser Leu
 325 330 335
 Pro Met Lys Ile Asp Val Ser Asp Ser Gln Glu Tyr Asp Asp Asp Tyr
 340 345 350
 Ser Tyr Pro Met Ile Thr Glu
 355

<210> 6766
 <211> 258
 <212> PRT
 <213> B.fragilis

<400> 6766
 Pro Ser Gly Gln Gln Glu Glu Arg Lys Ile Ser Met Asn Lys Thr Val
 1 5 10 15
 Ile Glu Leu Gln Asn Ile Lys Arg Asn Phe Gln Val Gly Asp Glu Thr
 20 25 30
 Val His Ala Leu Arg Gly Val Ser Phe Thr Ile Thr Glu Gly Glu Phe
 35 40 45
 Val Thr Ile Met Gly Thr Ser Gly Ser Gly Lys Ser Thr Leu Leu Asn
 50 55 60
 Thr Leu Gly Cys Leu Asp Thr Pro Thr Ser Gly Glu Tyr Leu Leu Asp
 65 70 75 80
 Gly Ile Ser Val Arg Thr Met Ser Lys Pro Gln Arg Ala Ile Leu Arg
 85 90 95
 Asn Arg Lys Ile Gly Phe Val Phe Gln Ser Tyr Asn Leu Leu Pro Lys
 100 105 110
 Thr Thr Ala Val Glu Asn Val Glu Leu Pro Leu Met Tyr Asn Ser Gly
 115 120 125
 Val Ser Ala Ser Glu Arg Arg Arg Arg Ala Ile Glu Ala Leu Gln Ala
 130 135 140
 Val Gly Leu Gly Glu Arg Leu Glu His Lys Ser Asn Gln Met Ser Gly
 145 150 155 160

Gly Gln Met Gln Arg Val Ala Ile Ala Arg Ala Leu Val Asn Asn Pro
 165 170 175
 Ala Val Ile Leu Ala Asp Glu Ala Thr Gly Asn Leu Asp Thr Arg Thr
 180 185 190
 Ser Phe Glu Ile Leu Val Leu Phe Gln Lys Leu His Ala Glu Gly Arg
 195 200 205
 Thr Ile Ile Phe Val Thr His Asn Pro Glu Ile Ala Gln Tyr Ser Ser
 210 215 220
 Arg Asn Ile Val Leu Arg Asp Gly Gln Val Lys Glu Asp Ser Thr Asn
 225 230 235 240
 Pro Asp Ile Leu Ser Ala Ala Glu Ala Leu Ala Ala Leu Pro Val Gln
 245 250 255
 Glu Glu

<210> 6767
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 6767

Ser Asn Tyr Lys Glu Ile Met Ala Asn Leu Phe Ile Thr Ile Val Ser
 1 5 10 15
 Thr Lys Lys Met Leu Asn Gly Lys His Lys Val Arg Ile Ala Val Ser
 20 25 30
 His Asn Leu Ala Thr Arg Tyr Ile Pro Thr Asn Ile Ile Ile Asp Ala
 35 40 45
 Glu Asn Glu Phe Lys Asn Gly Lys Val Val Lys Arg Pro Asp Lys Asp
 50 55 60
 Ile Leu Asn Ala Arg Leu Lys Lys Ile Tyr Asp Met Tyr Tyr Glu Arg
 65 70 75 80
 Cys Met Lys Ile Glu Tyr Ala Asn Thr Leu Thr Cys Thr Gln Leu Ile
 85 90 95
 Lys Tyr Cys Ile Phe Ala Glu Ser Arg
 100 105

<210> 6768
 <211> 505
 <212> PRT
 <213> B.fragilis

<400> 6768

Cys Ile Ser Lys Lys Arg Asn Met Ser Lys Phe Val Met Thr Ile Phe
 1 5 10 15
 Gly Ala Ser Gly Asp Leu Thr Lys Arg Lys Leu Met Pro Ala Leu Tyr
 20 25 30
 Ser Leu Tyr Val Ala Lys Arg Leu Pro Glu Glu Phe Glu Ile Leu Gly
 35 40 45
 Val Gly Arg Thr Val Tyr Glu Asp Ala Asp Tyr Arg Thr Tyr Ile Tyr
 50 55 60
 Asn Glu Met Glu Lys Phe Val Lys Ser Glu Glu Gln Asn Lys Glu Lys
 65 70 75 80
 Met Asp Ala Phe Val Gly His Leu His Tyr Leu Ala Ile Asp Pro Ala
 85 90 95
 Leu Glu Ser Gly Tyr Gly Gln Leu Arg Leu Arg Ile Glu Glu Leu Ser
 100 105 110
 Gly Asp Ser Arg Pro Asp Asp Leu Leu Phe Tyr Leu Ala Thr Pro Pro
 115 120 125
 Ser Leu Tyr Gly Val Ile Pro Leu His Leu Lys Ser Val His Leu Asn

130		135		140
Lys Gly Arg Ala Arg Ile Ile Val Glu Lys Pro Phe Gly Tyr Asp Leu				
145		150		155
Glu Ser Ala Glu Lys Leu Asn Lys Ile Tyr Ala Ser Val Phe Asp Glu				
	165		170	
His Gln Ile Tyr Arg Ile Asp His Phe Leu Gly Lys Glu Thr Ala Gln				
	180		185	
Asn Leu Leu Ala Phe Arg Phe Ala Asn Gly Ile Phe Glu Pro Leu Trp				
	195		200	
Asn Arg Asn Tyr Ile Asp Tyr Val Glu Val Thr Ala Val Glu Asn Leu				
	210		215	
Gly Ile Glu Gln Arg Gly Gly Phe Tyr Asp Thr Thr Gly Ala Leu Arg				
225		230		235
Asp Met Val Gln Asn His Leu Ile Gln Leu Val Ala Leu Thr Ala Met				
	245		250	
Glu Pro Pro Ala Val Phe Asn Ala Asp Asn Phe Arg Asn Glu Val Val				
	260		265	
Lys Val Tyr Glu Ser Leu Thr Pro Leu Thr Glu Thr Asp Leu Ser Glu				
	275		280	
His Ile Val Arg Gly Gln Tyr Thr Ala Gly Gly Asn Lys Arg Gly Tyr				
290		295		300
Arg Glu Glu Lys Asn Ile Ser Pro Asp Ser Arg Thr Glu Thr Tyr Ile				
305		310		315
Ala Met Lys Leu Gly Ile Ser Asn Trp Arg Trp Ser Gly Val Pro Phe				
	325		330	
Tyr Ile Arg Thr Gly Lys Gln Met Pro Thr Lys Val Thr Glu Ile Val				
	340		345	
Val His Phe Arg Glu Thr Pro His Gln Met Phe His Cys Ala Gly Gly				
	355		360	
Asn Cys Pro Arg Ala Asn Lys Leu Ile Leu Arg Leu Gln Pro Asn Glu				
	370		375	
Gly Ile Val Leu Lys Phe Gly Met Lys Val Pro Gly Pro Gly Phe Glu				
385		390		395
Val Lys Gln Val Thr Met Asp Phe Ser Tyr Asp Gln Leu Gly Gly Val				
	405		410	
Pro Gly Gly Asp Ala Tyr Ala Arg Leu Ile Glu Asp Cys Ile Leu Gly				
	420		425	
Asp Gln Thr Leu Phe Thr Arg Ser Asp Ala Val Glu Ala Ser Trp His				
	435		440	
Phe Phe Asp Pro Ile Leu Arg Tyr Trp Asn Glu His Pro Glu Ala Pro				
	450		455	
Leu Tyr Gly Tyr Pro Ala Gly Thr Trp Gly Pro Leu Glu Ser Glu Ala				
465		470		475
Met Met His Glu His Gly Ala Glu Trp Thr Asn Pro Cys Lys Asn Leu				
	485		490	
Thr Asn Thr Asp Gln Tyr Cys Glu Leu				
	500		505	

<210> 6769

<211> 79

<212> PRT

<213> B.fragilis

<400> 6769

Leu Glu Leu Asn Val Ser Arg Leu Leu Pro Ala Phe Tyr Lys Phe Ala			
1	5	10	15
Arg Asn Val Phe Ser Leu Val Leu Ile Gly Gly Leu Ala Ala Gln Lys			
	20	25	30
Val Gly Glu Glu Lys Gln Ala Glu Asn Glu Glu His Asp Lys Glu Phe			

	35		40		45	
His	Lys Tyr Asn Glu Pro	Gln Gly Thr Ser Pro	Gly Ser Cys Phe Glu			
50		55	60			
Ser	Leu Leu His Arg Asn	Ser Arg Cys Gly Ala	Val Tyr Ser Ser			
65		70	75			

<210> 6770

<211> 690

<212> PRT

<213> B.fragilis

<400> 6770

Ser	Ile	Met	Lys	Gln	Ile	Gln	Pro	Val	Phe	Leu	Ala	Met	Lys	Phe	Ser
1				5					10					15	
Phe	Leu	Ile	Phe	Phe	Phe	Phe	Ser	Leu	Pro	Val	Gly	Ala	Gln	Ser	Ile
			20				25						30		
Phe	Gln	Lys	Tyr	Gly	Arg	Phe	Leu	Thr	Glu	Pro	Arg	Ser	Tyr	Val	Cys
		35					40					45			
Tyr	Arg	Thr	Asp	Gly	Lys	Leu	Lys	Ile	Asp	Gly	Lys	Leu	Asp	Glu	Val
50						55					60				
Ser	Trp	Gln	Lys	Ala	Lys	Pro	Thr	Ala	Pro	Phe	Val	Asp	Ile	Ser	Gly
65					70					75					80
Glu	Gly	Phe	Pro	Thr	Pro	Lys	Tyr	Glu	Thr	Thr	Ala	Lys	Met	Leu	Trp
				85					90					95	
Asp	Asp	Glu	Tyr	Leu	Tyr	Ile	Gly	Ala	Met	Leu	Gln	Glu	Asp	Asp	Ile
			100					105					110		
Lys	Ala	Arg	Leu	Thr	Gln	Arg	Asp	Thr	Ile	Ile	Tyr	Tyr	Asp	Asn	Asp
		115					120						125		
Phe	Glu	Val	Phe	Ile	Asp	Pro	Asp	Trp	Asp	Gly	His	Asn	Tyr	Phe	Glu
	130					135					140				
Ile	Glu	Thr	Asn	Ala	Arg	Gly	Val	Ile	Phe	Asp	Leu	Met	Leu	Asp	Arg
145					150					155					160
Pro	Tyr	Arg	Ser	Ser	Gly	Asn	Phe	Met	Val	Gln	Trp	Asp	Cys	Pro	Gly
			165						170					175	
Leu	Lys	Leu	Ala	Ile	His	Arg	Glu	Gly	Thr	Leu	Asn	Lys	Ser	Lys	Asp
		180						185					190		
Lys	Asp	Lys	Tyr	Trp	Ser	Val	Glu	Met	Ala	Ile	Pro	His	Lys	Ala	Leu
	195						200					205			
Thr	Met	Asn	Phe	Asn	Asn	Pro	Leu	Lys	Ala	Gly	Asn	Cys	Trp	Arg	Ile
	210					215						220			
Asn	Phe	Ser	Arg	Val	Gln	Trp	Leu	Lys	Ala	Gly	Gly	Pro	Glu	Glu	Asn
225					230					235					240
Trp	Val	Trp	Thr	Pro	Thr	Gly	Lys	Val	Asp	Met	His	Met	Pro	Asp	Arg
			245						250					255	
Trp	Gly	Tyr	Leu	Phe	Phe	Ala	Ala	Glu	Lys	Val	Gly	Thr	Pro	Glu	His
		260						265					270		
Thr	Phe	Ala	Leu	Pro	Tyr	Asn	Ala	Ser	Val	Tyr	Lys	Leu	Leu	Trp	Ala
	275					280						285			
Met	Phe	Tyr	Val	Gln	Gln	Glu	Arg	Tyr	Ala	Lys	Glu	Lys	Asn	Tyr	Leu
	290					295					300				
Arg	Thr	Glu	Gln	Asp	Phe	Phe	Leu	Thr	Asp	Ala	Glu	Leu	Lys	Gly	Leu
305					310					315					320
Pro	Gln	Gly	Ala	Gln	Ile	Ser	Val	Glu	Ala	Thr	Trp	Asn	Thr	Tyr	Gln
			325						330					335	
Ile	Ala	Ile	Thr	Val	Pro	Gly	Glu	Gly	Arg	Arg	Tyr	Ile	Ile	Asn	Asn
		340						345					350		
Glu	Gly	Arg	Phe	Trp	Thr	Glu	Lys	Val	Ala	Pro	Arg	Gln	Val	Lys	Asn
	355					360						365			
Trp	Val	Trp	Thr	Arg	Ile	Asn	Lys	Ser	Lys	Ser	Glu	Thr	Asp	Tyr	Arg

370 375 380
 Gln Trp Phe Ala Leu Leu Lys Glu Cys Gly Ile Ser Gly Val Met Phe
 385 390 395 400
 Glu Gly Tyr Asp Glu Asn Leu Tyr Arg Met Cys Lys Glu Ala Gly Leu
 405 410 415
 Glu Ala His Phe Trp Lys Trp Thr Met Asn Arg Ala Glu Leu Leu Asn
 420 425 430
 Val His Pro Asp Trp Phe Ala Val Asn Arg Lys Gly Glu Ser Thr His
 435 440 445
 Asp Lys Pro Ala Tyr Val Asp Tyr Tyr Arg Phe Leu Cys Pro Asn His
 450 455 460
 Glu Gly Val Ala Gln Tyr Leu Ala Asp Asp Tyr Val Lys Ile Ala His
 465 470 475 480
 Leu Pro Tyr Val Asp Gly Val His Leu Asp Tyr Val Arg Phe Pro Asp
 485 490 495
 Val Val Leu Pro Val Ser Leu Trp Lys Asn Tyr Gly Ile Glu Gln Thr
 500 505 510
 Ser Glu His Pro Glu Tyr Asp Tyr Cys Tyr Cys Asp Val Cys Arg Thr
 515 520 525
 Lys Phe Lys Glu Gln Thr Gly Arg Asp Pro Leu Glu Leu Lys Tyr Pro
 530 535 540
 Met Glu Asp Gln Ser Trp Ile Asn Phe Arg Leu Asp Ala Ile Ser Arg
 545 550 555 560
 Val Val Asp Gln Ile Thr Lys Ala Val Lys Ala Asp Gly Lys Ala Ile
 565 570 575
 Ser Ala Ala Val Phe Pro Gly Pro Ser Met Ala Lys Lys Met Val Arg
 580 585 590
 Gln Asp Trp Gly Asn Trp Ser Leu Asp Ala Tyr Phe Pro Met Ile Tyr
 595 600 605
 Asn Gly Phe Tyr Tyr Glu Gly Pro Glu Trp Ile Gly Arg Ser Val Gln
 610 615 620
 Glu Ser Val Lys Thr Val Asp Gly Arg Ala Lys Val Tyr Ala Gly Leu
 625 630 635 640
 Met Phe Pro Asp Ile Lys Asn Asp Phe Glu Lys Ala Leu Asp Glu Ala
 645 650 655
 Phe Asp Asn Gly Ala Ser Gly Val Ser Phe Phe Asp Gly Pro Ser Asp
 660 665 670
 Glu Tyr Leu His Arg Phe Lys Ala Tyr Leu Asp Lys Lys Gly Leu Lys
 675 680 685
 Thr Glu
 690

<210> 6771

<211> 297

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (260)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6771

Asp His Ala Asp Arg Pro Gly Phe Asp Tyr Ser Glu Trp Glu Lys Ile
 1 5 10 15
 Gly Leu Ala His Ser Phe Ser Thr Pro Tyr Phe Met Ser Lys Asp Phe
 20 25 30
 Tyr Val Gly Tyr Gly Trp Tyr Arg Lys Ala Phe Pro Val Lys Lys Glu
 35 40 45

Ile Leu Gly Lys Lys Ser Phe Leu Glu Phe Asp Gly Val Phe Gln Glu
 50 55 60
 Ala Glu Ile Phe Val Asn Gly His Leu Ala Gly Thr His Lys Gly Gly
 65 70 75 80
 Tyr Thr Gly Phe Ser Ile Asp Ile Ser Ala Tyr Leu Lys Glu Gly Lys
 85 90 95
 Asn Leu Val Ala Val Arg Val Asn Asn Cys Trp Arg Pro Asp Leu Ala
 100 105 110
 Pro Arg Ala Gly Glu His Val Phe Ser Gly Gly Ile Tyr Arg Asn Val
 115 120 125
 Arg Leu Val Ile Lys Pro Pro Thr Tyr Ile Asp Trp Tyr Gly Thr Trp
 130 135 140
 Val Thr Thr Pro Asp Leu Ala Glu Asn Lys Gly Lys Ser Gly Ser Val
 145 150 155 160
 His Ile Arg Thr Asp Val Cys Asn Ala Ser Gly Lys Thr Asp Thr Tyr
 165 170 175
 Arg Leu Leu Thr Thr Val Val Asp Ala Gln Gly Lys Glu Val Ser Ser
 180 185 190
 Val Ser Thr Ser Gln Val Leu Pro Asp Asn Ala Thr Tyr Thr Phe Lys
 195 200 205
 Gln Gln Thr Lys Glu Ile Gln Ala Pro Gln Leu Trp His Pro Asn His
 210 215 220
 Pro Ala Leu Tyr Lys Val Ile Ser Ser Leu Tyr His Gly Gln Glu Leu
 225 230 235 240
 Ile Asp Arg Tyr Glu Thr Thr Phe Gly Phe Arg Trp Phe Glu Trp Thr
 245 250 255
 Ala Asp Arg Xaa Phe Phe Leu Asn Gly Glu His Leu Tyr Phe Lys Gly
 260 265 270
 Ala Asn Val His Leu Asp His Ala Gly Trp Gly Asp Ala Val Thr Gln
 275 280 285
 Asn Arg Asn Ala Lys Lys Asn Leu Arg
 290 295

<210> 6772

<211> 341

<212> PRT

<213> B.fragilis

<400> 6772

Leu Arg Ser Glu Arg Met Arg Ile Leu Val Ala Ser Asn Ser Thr Ser
 1 5 10 15
 Lys Arg Thr Asp Tyr Phe Ile Lys Ala Gly Arg Ser Leu Gly Ala Asp
 20 25 30
 Thr Cys Phe Val Thr Tyr Asp Glu Leu Ser Ala Val Leu Pro Asp Cys
 35 40 45
 Arg Asp Thr Val Val Lys Leu Glu Pro Pro Val Phe Arg Glu Ala Asp
 50 55 60
 Phe Arg Lys Tyr Asn Leu Leu Cys Glu Glu Tyr Arg Ser Leu Leu Ser
 65 70 75 80
 Arg Leu Ala Asp Met Asp Lys Ser Glu Ser Val His Phe Leu Asn Glu
 85 90 95
 Pro Ala Ala Ile Leu Cys Ala Leu Asp Lys Val Tyr Thr Gln Arg Lys
 100 105 110
 Leu Thr Gly Ala Gly Leu Lys Thr Pro Leu Leu Ser Asp Ala Leu
 115 120 125
 Ser Thr Phe Asp Asp Leu Ala Ala Ile Leu Cys Arg Gln Lys Arg Gly
 130 135 140
 Gly Phe Leu Lys Pro Arg Tyr Gly Ser Gly Ala Gly Gly Ile Met Ala
 145 150 155 160

Val Arg Tyr Asn His Arg Arg Asp Glu Trp Val Ala Tyr Thr Thr Met
 165 170 175
 Ser Trp Glu Gly Gly Arg Val Cys Asn Ala Lys Arg Ile Cys Arg Leu
 180 185 190
 Thr Asn Arg Lys Glu Ile Ala Thr Leu Ala Glu Glu Val Ile Arg Cys
 195 200 205
 Gly Ala Val Leu Glu Glu Trp Met Ala Lys Glu Lys Leu Glu Gly Glu
 210 215 220
 Asn Tyr Asp Leu Arg Val Val Cys Arg Gly Asp Glu Val Asp Tyr Val
 225 230 235 240
 Val Val Arg Cys Ser Asp Asp Ala Ile Thr Asn Leu His Leu Asn Asn
 245 250 255
 Lys Ala Arg Leu Phe Glu Glu Leu Ser Leu Ala Pro Ser Val Arg Glu
 260 265 270
 Glu Leu Phe Cys Arg Ser Ile Thr Ala Met Lys Ala Leu Gly Leu Arg
 275 280 285
 Tyr Ala Gly Ile Asp Val Leu Ile Ala Arg Asn Thr Asp Thr Pro Tyr
 290 295 300
 Ile Ile Glu Val Asn Gly Gln Gly Asp His Ile Tyr Gln Asp Met Tyr
 305 310 315 320
 Thr Glu Asn Lys Ile Tyr Ala Asn Gln Ile Lys Thr Ile Glu Ser Leu
 325 330 335
 Phe Asn Gly Asn Arg
 340

<210> 6773

<211> 411

<212> PRT

<213> B.fragilis

<400> 6773

Arg Tyr Asn Asp Met Lys Lys Lys Lys Ile Ile Leu Ile Ala Val Ser
 1 5 10 15
 Leu Ala Ile Leu Ala Gly Gly Gly Val Trp Leu Phe Gly Gly Ser Thr
 20 25 30
 Ala Lys His Lys Val Thr Tyr Ala Thr Val Ser Lys Gly Glu
 35 40 45
 Ile Ser Glu Ser Val Thr Ala Thr Gly Thr Ile Glu Pro Val Thr Glu
 50 55 60
 Val Glu Val Gly Thr Gln Val Ser Gly Ile Ile Asp Lys Ile Tyr Val
 65 70 75 80
 Asp Tyr Asn Ala Ala Val Thr Lys Gly Gln Leu Ile Ala Glu Met Asp
 85 90 95
 Arg Val Thr Leu Gln Ser Glu Leu Ala Ser Gln Arg Ala Thr Tyr Ser
 100 105 110
 Gly Ala Lys Ala Glu Tyr Glu Tyr Gln Lys Lys Asn Tyr Glu Arg Asn
 115 120 125
 Lys Gly Leu His Glu Lys Gly Leu Ile Ser Asp Thr Asp Tyr Glu Gln
 130 135 140
 Ser Leu Tyr Asn Tyr Glu Lys Ala Lys Ser Ser Phe Glu Ser Ser Gln
 145 150 155 160
 Ala Ser Leu Ala Lys Ala Glu Arg Asn Leu Ser Tyr Ala Thr Ile Thr
 165 170 175
 Ser Pro Ile Asp Gly Val Val Ile Ser Arg Asp Val Glu Glu Gly Gln
 180 185 190
 Thr Val Ala Ser Gly Phe Glu Thr Pro Thr Leu Phe Thr Ile Ala Ala
 195 200 205
 Asp Leu Thr Gln Met Gln Val Val Ala Asp Val Asp Glu Ala Asp Ile
 210 215 220

Gly	Gly	Val	Glu	Glu	Gly	Gln	Arg	Ala	Thr	Phe	Thr	Val	Asp	Ala	Tyr
225					230					235					240
Pro	Asn	Asp	Val	Phe	Glu	Gly	Ile	Val	Thr	Gln	Ile	Arg	Leu	Gly	Asp
				245					250					255	
Ala	Ser	Ser	Thr	Ser	Thr	Ser	Ser	Ser	Ser	Thr	Thr	Val	Val	Thr	Tyr
			260					265					270		
Glu	Val	Val	Ile	Ser	Ala	His	Asn	Pro	Asp	Leu	Lys	Leu	Lys	Pro	Arg
	275						280					285			
Leu	Thr	Ala	Asn	Val	Thr	Ile	Tyr	Thr	Leu	Asp	Arg	Lys	Asp	Val	Leu
	290					295					300				
Ser	Val	Pro	Ala	Arg	Ala	Leu	Arg	Phe	Thr	Pro	Glu	Lys	Pro	Leu	Ile
305					310					315					320
Gly	Asp	Asn	Asp	Ile	Val	Lys	Asp	Cys	Glu	Gly	Glu	His	Lys	Ile	Trp
				325					330					335	
Thr	Arg	Glu	Gly	Asn	Thr	Phe	Thr	Ala	His	Pro	Val	Gln	Ile	Gly	Ile
			340					345					350		
Thr	Asn	Gly	Ile	Asn	Thr	Glu	Ile	Thr	Gln	Gly	Ala	Ser	Glu	Gly	Met
	355					360						365			
Val	Val	Val	Thr	Glu	Ala	Thr	Ile	Gly	Asn	Met	Pro	Gly	Gly	Asn	Val
	370					375					380				
Ser	Pro	Glu	Gly	Gly	Gln	Glu	Gly	Gly	Gly	Glu	Gln	Ser	Pro	Phe	Met
385					390					395					400
Pro	Ser	His	Pro	Gly	Ser	Lys	Lys	Lys	Gly	Lys					
				405					410						

<210> 6774

<211> 206

<212> PRT

<213> B.fragilis

<400> 6774

Asn	Pro	Ala	Arg	Arg	Glu	Ala	Glu	Lys	Ser	Arg	Thr	Glu	Ala	Glu	Leu
1				5					10					15	
Lys	Asn	Leu	Arg	Asn	Gln	Leu	Asn	Pro	His	Phe	Leu	Leu	Asn	Thr	Leu
		20						25					30		
Asn	Asn	Ile	Tyr	Ala	Leu	Ile	Ala	Phe	Asp	Ser	Asp	Lys	Ala	Gln	Gln
	35					40						45			
Ala	Val	Gln	Glu	Leu	Ser	Lys	Leu	Leu	Arg	Tyr	Val	Leu	Tyr	Asp	Asn
	50					55					60				
Gln	Gln	Asn	Tyr	Val	Pro	Leu	Cys	Lys	Glu	Val	Asp	Phe	Ile	Arg	Asn
65				70					75					80	
Tyr	Ile	Glu	Leu	Met	Arg	Ile	Arg	Leu	Ser	Gly	Asn	Val	Glu	Val	Ile
			85						90					95	
Thr	Gln	Phe	Asp	Ile	Gln	Pro	Asp	Ser	Arg	Thr	Glu	Ile	Ala	Pro	Leu
		100					105						110		
Ile	Phe	Ile	Ser	Leu	Ile	Glu	Asn	Ala	Phe	Lys	His	Gly	Ile	Ser	Pro
	115					120						125			
Thr	Glu	Leu	Ser	Phe	Ile	His	Ile	Leu	Ile	Ser	Glu	Asn	Lys	Glu	Glu
	130					135					140				
Ile	Arg	Cys	Glu	Ile	Arg	Asn	Ser	Tyr	His	Pro	Lys	Thr	Asn	Thr	Asp
145					150					155					160
Lys	Ser	Gly	Ser	Gly	Ile	Gly	Leu	Glu	Gln	Val	Arg	Lys	Arg	Leu	Glu
			165					170						175	
Leu	Ser	Tyr	Pro	Gly	Arg	Tyr	Gln	Trp	Asp	Lys	Ala	Ile	Ser	Pro	Asp
		180					185						190		
Gly	Lys	Glu	Tyr	Ile	Ser	Lys	Leu	Leu	Ile	Phe	Asn	His	Pro		
	195						200					205			

<210> 6775

<211> 259
 <212> PRT
 <213> B.fragilis

<400> 6775

Ala	Trp	Cys	Arg	Met	Asp	Gln	Ser	Met	Gln	Glu	Leu	Asn	Lys	His	Arg
1				5					10					15	
Ser	Ile	Leu	Arg	Ala	Met	Lys	Pro	Tyr	Ile	Phe	Pro	Ser	Ser	Ile	Glu
			20					25					30		
Thr	Ala	Arg	Ala	Leu	Ile	Leu	His	Leu	Val	Lys	Leu	Met	Leu	Asp	Glu
		35					40					45			
Pro	Asp	Arg	Thr	Phe	Cys	Ile	Ala	Phe	Ser	Gly	Gly	Ser	Thr	Pro	Ala
	50					55					60				
Leu	Met	Phe	Asp	Leu	Trp	Ala	Asn	Glu	Tyr	Thr	Asp	Ile	Thr	Pro	Trp
65					70					75					80
Glu	Arg	Leu	Lys	Val	Phe	Trp	Val	Asp	Glu	Arg	Cys	Val	Pro	Pro	Glu
				85					90					95	
Asn	Ser	Asp	Ser	Asn	Tyr	Gly	Met	Met	Arg	Ser	Leu	Leu	Leu	Ser	Ile
			100					105					110		
Val	Pro	Ile	Pro	Tyr	Glu	Asn	Val	Phe	Arg	Ile	Gln	Gly	Glu	Lys	Asn
		115					120					125			
Pro	Lys	Lys	Glu	Ala	Ala	Arg	Tyr	Ser	Lys	Leu	Val	Met	Lys	Glu	Val
		130				135					140				
Pro	Val	Glu	Asn	Glu	Phe	Pro	Leu	Phe	Asp	Val	Val	Leu	Leu	Gly	Ala
145					150					155					160
Gly	Asn	Asp	Gly	His	Thr	Ser	Ser	Ile	Phe	Pro	Gly	Gln	Glu	Glu	Leu
				165					170					175	
Leu	Ser	Thr	Asp	His	Ile	Tyr	Glu	Ala	Asn	Phe	Asn	Pro	Asn	Asn	Gly
			180					185					190		
Gln	Lys	Arg	Ile	Ala	Leu	Thr	Gly	Leu	Pro	Ile	Leu	Asn	Ala	Arg	Arg
		195					200					205			
Ile	Ile	Phe	Leu	Ile	Thr	Gly	Arg	Val	Lys	Ser	Pro	Val	Val	Glu	Asp
		210				215					220				
Ile	Phe	Tyr	Ser	Gly	Asp	Thr	Gly	Pro	Ala	Ala	Tyr	Ile	Ala	His	His
225					230					235					240
Ala	Asp	Asn	Val	Glu	Leu	Phe	Met	Asp	Asn	Ala	Ala	Ala	Glu	Lys	Val
				245					250					255	
Ile	Arg	Gly													

<210> 6776
 <211> 426
 <212> PRT
 <213> B.fragilis

<400> 6776

Tyr	Gln	Ala	Leu	Val	Leu	Arg	Phe	Val	Val	Leu	Ile	Asn	Asn	Leu	Phe
1				5					10					15	
Tyr	Met	Arg	Ile	Lys	Arg	Leu	Leu	Tyr	Ala	Ile	Ala	Thr	Ile	Leu	Pro
			20					25					30		
Phe	Leu	Phe	Leu	Cys	Ser	Cys	Tyr	Glu	Glu	Gln	Glu	Pro	Gln	Gln	Glu
		35					40					45			
Lys	Gln	Asp	Lys	Glu	Lys	Trp	Thr	Met	Gln	Val	Ala	Gly	Asn	Gln	Leu
	50					55					60				
Asn	Glu	Phe	Leu	Asn	Ile	Asn	Pro	Asp	Leu	Arg	Asn	Leu	Tyr	Ala	Tyr
65					70					75					80
Pro	Asp	Trp	Asp	Ala	Ala	Gln	Ile	Ile	Arg	Glu	Arg	Ser	Asp	Thr	Val
				85					90					95	
Ser	Tyr	Tyr	Val	Pro	Val	Val	Asp	Ile	Thr	Ala	Asp	Thr	Cys	Ser	Tyr

100	105	110
Leu Ile Ile Ala Arg Ala Ser Asn Asp Val Tyr Leu Tyr Met Val Arg		
115	120	125
Leu Pro Glu Glu Tyr Ser Gly Phe Asp Ser Phe Leu Glu Glu His Leu		
130	135	140
Lys Ile Leu Arg Ile Ile Asp Gly Ala Arg Arg Val Pro Val Gly Tyr		
145	150	155
Leu His Asn Phe Pro Asp Asp Val Leu Thr Arg Thr Arg Ser Ser Gly		
165	170	175
Ser Leu Phe Asn His Asp Arg Glu Thr Asn Thr Glu Ile Leu Glu Asn		
180	185	190
Asn Thr Phe Val Lys Asp Asp Leu Phe Gly Ala Gly Phe Ser Leu Pro		
195	200	205
Glu Val Thr Val Ile Gly Arg Arg Pro Thr Ser Ser Glu Asp Pro Phe		
210	215	220
Lys Trp Pro Phe Gly Asp Met Pro Ser Glu Ser Pro Lys Ala Leu Pro		
225	230	235
Gly Leu Asp Asp Phe Phe Ser Pro Gln Gly Gly Gly Ser Ser Ser Leu		
245	250	255
Ser Ser Pro Gln Gln Ser Gly Ser Leu Pro Lys Pro Glu Glu Val Ile		
260	265	270
Lys Asp Ala Thr Val Lys Lys Ala Leu Glu Glu Ala Trp Ser Asp Met		
275	280	285
Leu Lys Arg Ser Thr Lys Asp Gln Arg Gln Glu Val Gly Phe Trp Ile		
290	295	300
Tyr Tyr Asp Pro Val Lys Lys Gln Tyr Tyr Ile Gly Lys Lys Arg Tyr		
305	310	315
Gly Ile Ala Val Lys Asn Asp Gly Lys Ala Arg Gly Asn Ile Ser Leu		
325	330	335
Gly Asp Lys Ser Pro Ser Val Asn Gly Val Pro Ala Thr Ala Lys Val		
340	345	350
Val Ala Ser Phe His Thr His Thr Pro Met Thr Glu Ile Lys Gly Met		
355	360	365
Lys Arg Lys Val Gly Pro Ser Lys Glu Asp Lys Gly Asn Ala Asp Lys		
370	375	380
Asn Arg Ile Pro Ile Ile Val Tyr Asp Tyr Ile Gly Thr Lys Asp Pro		
385	390	395
Arg Thr Asn Asp Tyr Tyr Val Ile Gly Gly His Lys Val Ser Asp Pro		
405	410	415
Lys Lys Met Tyr Ile Tyr Gln Pro Lys Lys		
420	425	

<210> 6777

<211> 419

<212> PRT

<213> B.fragilis

<400> 6777

Lys Gln Leu Ser Met Lys Met Ile Leu Asn Phe Ser Glu Cys Ile Ile		
1	5	10
Ser Phe Phe Ser Leu Cys Leu Leu Cys Val Val Phe Ser Cys Asp Glu		
20	25	30
Met Asp Ile Asp Gln Gly Pro Pro Thr Ser Val Thr Arg Asn Leu Met		
35	40	45
Thr Ser Asp Gly Pro Gly Phe Lys Ile Asp Thr Val Thr Tyr Asp Lys		
50	55	60
Ile Pro Ala Glu Tyr Ala Arg Lys Ile Leu Ser Leu Glu Glu Pro Thr		
65	70	75
Ser Val Val Thr Asp Lys Ser Lys Arg Ser Phe Arg Val Asn Glu Leu		
		80

85 90 95
 Phe Gln Ile Arg Lys Ala Asn Asp Gln Leu Leu Ser Ile Thr Ser Tyr
 100 105 110
 Ser Ala Lys Thr Val Tyr Asp Leu Ile Leu Glu Val Tyr Val Glu Gly
 115 120 125
 Gly Ser Gln Tyr Val Pro Ile Ala Tyr Leu Asp Ser Ile Pro Gly Phe
 130 135 140
 Ser Gln Phe Glu Phe Lys Pro Ser Leu Ile Asn Gly Asn Phe Ile Tyr
 145 150 155 160
 Lys Lys Asp Asn Gly Val Asp Thr Leu Ser Ser Ser Leu Asn Glu
 165 170 175
 Lys Arg Met Lys Phe Arg Leu Leu Ser Asp Asp Lys His Phe Glu Met
 180 185 190
 Leu Ser Lys Ile Asp Ala Glu Trp Asn Ile Ser Phe Ser Asn Tyr Asp
 195 200 205
 Trp Lys Pro Gly Tyr Glu Ser Gly Ser Trp Arg Glu Leu Ser Ala Ile
 210 215 220
 Tyr Ala Arg Glu Trp Val Val Ile Ile Thr Asn Tyr Ala Tyr Met Met
 225 230 235 240
 Thr Thr Pro Glu Tyr Ala Phe Ile Met Arg Asn Phe Ser Lys Ile Phe
 245 250 255
 Gly Gly Glu Leu Tyr Asp Asn Asn Arg Val Lys Phe Thr Pro Glu Lys
 260 265 270
 Tyr Leu Ser Glu Glu Lys Arg Phe Lys Gln Pro His Asn Phe Val Cys
 275 280 285
 Gly Arg Ser Lys Pro Ser Val Gly Gly Leu Gly Gly Asn Val Trp
 290 295 300
 Gly Val Thr His Trp Asn Tyr Tyr Gly His Tyr Ala Ser Phe Ser Gly
 305 310 315 320
 Trp Glu Ser Ile Thr His Glu Phe Met His Cys Met Gly Tyr Gly His
 325 330 335
 Ser Ser Asn Met Thr Tyr Ala Ser Gly Gly Val Gly Trp Thr Glu Phe
 340 345 350
 Met Trp Gln Leu His Thr Tyr Leu Arg Gly Asn Asp Trp Leu Pro Tyr
 355 360 365
 Thr Asp Arg Asn Leu Leu Gly Phe His Lys Pro Glu Asn Ala Lys Tyr
 370 375 380
 Arg Asp Gly Gly Ile Asp Pro Asp Lys Leu Asn Asp Asn Lys Ile Leu
 385 390 395 400
 Gln Phe Tyr Asn Lys Ser Lys Val Thr Gln Tyr Phe Leu Ala Asn Pro
 405 410 415
 Leu Ser Lys

<210> 6778
 <211> 158
 <212> PRT
 <213> B.fragilis

<400> 6778
 Thr Lys Ile Ile Ile Phe Val Pro Met Lys Gln Ser Leu Thr Ser Ala
 1 5 10 15
 Arg Arg Pro Leu Glu Ile Leu Ile His Ile Ile Ser Trp Gly Ile Val
 20 25 30
 Phe Gly Phe Pro Phe Phe Phe Ile Asp Arg Thr Gly Asp Ser Ile Asn
 35 40 45
 Trp His Ala Tyr Leu Arg His Ser Ala Val Pro Leu Ser Phe Val Thr
 50 55 60
 Val Phe Tyr Leu Asn Tyr Phe Leu Leu Val Pro His Leu Leu Phe Gln

65					70					75				80	
Glu	Gln	Lys	Asn	Lys	Tyr	Ile	Ile	Tyr	Asn	Ile	Leu	Leu	Val	Cys	Leu
				85					90					95	
Ile	Gly	Leu	Leu	Leu	His	Ile	Trp	Gln	Ser	Leu	Asn	Ala	Pro	Ala	Pro
			100					105					110		
Thr	Leu	Lys	Lys	Pro	His	Met	Pro	Pro	Gly	Trp	Asp	Phe	Phe	Arg	Lys
		115					120					125			
Arg	His	Ser	Lys	Pro	His	Leu	His	His	Arg	Thr	Glu	Cys	Arg	His	Pro
	130					135					140				
His	Glu	Cys	Pro	Val	Gly	Asp	Lys	Leu	Lys	Pro	Arg	Pro	Ser		
145					150					155					

<210> 6779

<211> 515

<212> PRT

<213> B.fragilis

<400> 6779

Cys	Pro	Asn	Met	Tyr	Ile	Pro	Asp	Pro	Asn	Arg	Met	Met	Ser	Ser	Leu
1				5					10					15	
Ser	Thr	Val	Arg	Ser	Ile	Tyr	Tyr	Arg	Gly	Ser	Leu	Glu	His	Cys	Asn
		20						25					30		
Tyr	Thr	Cys	Ser	Tyr	Cys	Pro	Phe	Gly	Arg	Lys	Ser	Val	Ser	Ala	Asp
		35					40					45			
Thr	Thr	Glu	Asp	Gln	Glu	Ala	Leu	Asp	Arg	Phe	Ile	Ser	Arg	Ile	Gly
	50					55					60				
Gly	Trp	Lys	Tyr	Gly	Ser	Leu	Arg	Ile	Leu	Ile	Ile	Pro	Tyr	Gly	Glu
65				70					75					80	
Ala	Met	Ile	His	Arg	Tyr	Tyr	Arg	Glu	Gly	Ile	Met	Arg	Leu	Ala	Ala
			85					90					95		
Met	Pro	His	Val	Ile	Gly	Val	Ser	Cys	Gln	Thr	Asn	Leu	Ser	Phe	Ser
			100					105					110		
Val	Ser	Arg	Phe	Leu	Asp	Glu	Ala	Glu	Ala	Glu	Gln	Ala	Asp	Val	Ser
		115					120					125			
Lys	Phe	Arg	Phe	Trp	Ala	Ser	Tyr	His	Pro	Glu	Met	Val	Gly	Val	Gly
	130				135					140					
Glu	Phe	Ala	Ser	Lys	Val	Glu	Met	Leu	Arg	Ala	Ala	Gly	Ile	Gly	Val
145				150					155						160
Cys	Ala	Gly	Ala	Val	Gly	Asp	Pro	Ser	Ala	Lys	Glu	Gln	Ile	Arg	Lys
			165						170					175	
Leu	Arg	Gln	Leu	Leu	Asp	Pro	Ser	Val	Tyr	Leu	Phe	Val	Asn	Ala	Met
		180						185					190		
Gln	Gly	Leu	Arg	Lys	Pro	Leu	Ser	Glu	Glu	Asp	Ile	Arg	Phe	Phe	Gly
		195					200					205			
Glu	Ile	Asp	Asn	Leu	Phe	Asp	Tyr	Asp	Arg	Arg	Asn	Ala	Lys	Ala	Cys
	210					215					220				
Leu	Asp	Gly	Cys	Val	Gly	Gly	Arg	Glu	Thr	Leu	Phe	Ile	Asp	Arg	Lys
225				230					235					240	
Gly	Asp	Met	Tyr	Ala	Cys	Pro	Arg	Ser	Gly	Ile	Arg	Met	Gly	Asn	Phe
			245					250					255		
Tyr	Asp	Asp	Pro	Thr	Ser	Asp	Phe	Gln	Pro	Phe	Cys	Leu	Arg	Lys	Val
		260					265						270		
Cys	Asp	Trp	Tyr	Ile	Ala	Leu	Ser	Asn	Leu	Cys	Asp	Thr	Pro	Leu	Arg
	275					280						285			
Arg	Met	Met	Gly	Asp	Gly	Ala	Met	Trp	Arg	Ile	Leu	Glu	Arg	Lys	Lys
	290				295						300				
Val	Glu	Ala	Val	Phe	Phe	Asp	Val	Asp	Gly	Thr	Leu	Thr	Asp	Ala	Gln
305				310					315					320	
Gly	Arg	Ile	Pro	Asp	Arg	Thr	Val	Ser	Val	Leu	Glu	Tyr	Met	Ala	Lys

325 330 335
 Arg Leu Pro Leu Tyr Leu Ser Thr Ala Leu Pro Val Ser His Ala Lys
 340 345 350
 Lys Arg Leu Gly Asn Val Phe Gly Leu Phe Ser Gly Gly Val Phe Ala
 355 360 365
 Asp Gly Gly Leu Leu Cys Tyr Gly Glu Thr Ile Glu Cys Val Pro Ile
 370 375 380
 Ala Asn Pro Val Thr Ala Gly Phe Pro Gly Cys Arg Val Thr Arg Tyr
 385 390 395 400
 Thr Arg Glu Gly Lys Val Phe Lys Tyr Ala Val Leu Ala Pro Asn Thr
 405 410 415
 Arg Glu Ala Val Arg Trp Leu Thr Glu Leu Asp Glu Glu Ala Tyr Gln
 420 425 430
 Leu Tyr Gln Glu Gly Arg Leu Leu Thr Val Val Asp Ser Lys Ala Gly
 435 440 445
 Lys Lys Asn Gly Leu Ile Thr Leu Cys Ala Arg Leu Gly Ile Ser Leu
 450 455 460
 Arg Glu Val Leu Val Val Gly Asn Thr Met His Asp Trp Pro Met Met
 465 470 475 480
 Ser Val Ala Gly Tyr Ser Cys Ala Val Met Asp Ala Glu Glu Lys Leu
 485 490 495
 Arg Lys Leu Ser Gly Tyr Val Leu Asn Pro Asp Ser Ile Pro Val Phe
 500 505 510
 Phe Asp Ile
 515

<210> 6780
 <211> 395
 <212> PRT
 <213> B.fragilis

<400> 6780
 Asn Leu Val Met Lys Lys Ile His Ile Gly Leu Leu Pro Arg Ile Ile
 1 5 10 15
 Ile Ala Ile Ile Leu Gly Ile Ala Ile Gly Asn Phe Leu Pro Thr Pro
 20 25 30
 Leu Val Arg Leu Phe Val Thr Phe Asn Ser Ile Phe Gly Glu Phe Leu
 35 40 45
 Asn Phe Ser Ile Pro Leu Ile Ile Leu Gly Leu Val Thr Ile Ala Ile
 50 55 60
 Ala Asp Ile Gly Lys Gly Ala Gly Arg Met Leu Leu Val Thr Ala Leu
 65 70 75 80
 Ile Ala Tyr Gly Ala Thr Leu Phe Ser Gly Phe Leu Ser Tyr Phe Thr
 85 90 95
 Gly Ala Ala Ile Phe Pro Ser Leu Ile Thr Pro Gly Ala Pro Leu Asp
 100 105 110
 Glu Val Ser Glu Ala Gln Gly Ile Leu Pro Tyr Phe Ser Val Ala Ile
 115 120 125
 Pro Pro Leu Met Asn Val Met Thr Ala Leu Val Leu Ala Phe Thr Leu
 130 135 140
 Gly Leu Gly Leu Ala Ser Leu His Ser Asp Ala Leu Lys Asn Val Ala
 145 150 155 160
 Arg Asp Phe Gln Glu Ile Ile Val Arg Met Ile Ser Ala Val Ile Leu
 165 170 175
 Pro Leu Leu Pro Ile Tyr Ile Phe Gly Ile Phe Leu Asn Met Thr His
 180 185 190
 Ser Gly Gln Val Phe Ser Ile Leu Met Val Phe Ile Lys Ile Ile Gly
 195 200 205
 Val Ile Phe Ile Leu His Ile Phe Leu Leu Val Phe Gln Tyr Cys Ile

210	215	220
Ala Ala Leu Phe Val Arg Lys Asn Pro Phe Arg Leu Leu Gly Arg Met		
225	230	235
Leu Pro Ala Tyr Phe Thr Ala Leu Gly Thr Gln Ser Ser Ala Ala Thr		
	245	250
Ile Pro Val Thr Leu Glu Gln Thr Lys Lys Asn Gly Val Ser Ala Asp		
	260	265
Ile Ala Gly Phe Val Ile Pro Leu Cys Ala Thr Ile His Leu Ser Gly		
	275	280
Ser Thr Leu Lys Ile Val Ala Cys Ala Leu Ala Leu Met Met Met Gln		
	290	295
Gly Met Pro Phe Asp Phe Ser Leu Phe Ala Gly Phe Ile Phe Met Leu		
305	310	315
Gly Ile Thr Met Ile Ala Ala Pro Gly Val Pro Gly Gly Ala Ile Met		
	325	330
Ala Ser Leu Gly Ile Leu Gln Ser Met Leu Gly Phe Asp Glu Ser Ala		
	340	345
Gln Ala Leu Met Ile Ala Leu Tyr Ile Ala Met Asp Ser Phe Gly Thr		
	355	360
Ala Cys Asn Val Thr Gly Asp Gly Ala Ile Ala Leu Ile Ile Asp Lys		
	370	375
Ile Met Gly Lys Arg Lys Thr Pro Glu Ser Leu		
385	390	395

<210> 6781
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 6781
Asn Arg Met Met Lys Arg Lys Leu Glu Ile His Lys Ile Asp Val Ser
1 5 10 15
Ser Ser Leu Pro Ile Pro Tyr Ala Asp Glu Gly Ile Arg Ala Gly Phe
20 25 30
Pro Ser Pro Ala Gln Asp Tyr Met Glu Gln Ala Ile Asp Leu Asn Lys
35 40 45
Glu Leu Ile Lys His Pro Ala Ser Thr Phe Phe Gly Arg Val Val Gly
50 55 60
Asp Ser Met Arg Asp Glu Gly Ile Glu Glu Gly Asp Ile Leu Val Ile
65 70 75 80
Asp Lys Ser Leu Glu Leu Gln Asp Asp Asp Leu Ala Val Cys Phe Ile
85 90 95
Asp Gly Asp Phe Thr Val Lys Arg Val Arg Ile Glu Pro Asn Ala Val
100 105 110
Trp Leu Ile Pro Ala Asn Pro Lys Tyr Ser Leu Ile Lys Val Thr Lys
115 120 125
Glu Asn Glu Phe Ile Val Trp Gly Ile Val Thr Tyr Thr Ile Lys Lys
130 135 140
Asn Arg Arg Lys Arg
145

<210> 6782
 <211> 319
 <212> PRT
 <213> B.fragilis

<400> 6782
Phe Met Lys Ile Val Val Leu Asp Gly Tyr Ala Ala Asn Pro Gly Asp
1 5 10 15

Leu Asn Trp Asp Glu Leu Arg Thr Leu Gly Glu Cys Glu Ile Tyr Asp
 20 25 30
 Arg Thr Ala Pro Asp Glu Val Leu Glu Arg Ser Lys Asp Ala Glu Ala
 35 40 45
 Ile Leu Thr Asn Lys Val Val Ile Thr Ala Glu His Met Ala Ser Leu
 50 55 60
 Pro Asn Leu Lys Tyr Ile Gly Val Ile Ala Thr Gly Tyr Asn Ile Ile
 65 70 75 80
 Asp Val Ala Ala Ala Lys Glu Arg Gly Ile Thr Val Thr Asn Ile Pro
 85 90 95
 Ala Tyr Ser Thr Pro Ser Val Gly Gln Met Val Phe Ala His Ile Leu
 100 105 110
 Asn Ile Thr Gln Arg Val Gln His Tyr Ala Asp Glu Val Arg Gln Gly
 115 120 125
 Arg Trp Thr Gln Ser Gln Asp Phe Cys Tyr Trp Asp Thr Pro Leu Ile
 130 135 140
 Glu Leu Leu Gly Lys Lys Ile Gly Leu Ile Gly Leu Gly Gln Thr Gly
 145 150 155 160
 Tyr Asn Thr Ala Arg Ile Ala Ile Gly Phe Gly Met Lys Val Trp Ala
 165 170 175
 Tyr Thr Ser Lys Ser Arg Leu Gln Leu Pro Pro Glu Ile Arg Lys Ala
 180 185 190
 Glu Leu Asp Gln Ile Phe Arg Glu Cys Asp Ile Val Ser Leu His Cys
 195 200 205
 Pro Leu Thr Glu Ser Thr Arg Asp Leu Val Asn Thr Arg Arg Leu Glu
 210 215 220
 Leu Met Lys Pro Asn Ala Ile Leu Ile Asn Thr Ser Arg Gly Pro Leu
 225 230 235 240
 Val Asn Glu His Asp Leu Ala Glu Ala Leu Asn Asn Tyr Lys Ile Tyr
 245 250 255
 Ala Ala Gly Leu Asp Val Leu Ser Thr Glu Pro Pro Arg Ala Asp Asn
 260 265 270
 Pro Leu Leu Thr Ala Arg Asn Cys Phe Ile Thr Pro His Ile Ala Trp
 275 280 285
 Ala Thr Ser Ala Ala Arg Glu Arg Leu Met Ala Ile Leu Val Asp Asn
 290 295 300
 Leu Lys Ala Tyr Ile Gly Gly Lys Pro Val Asn Asn Val Ala Lys
 305 310 315

<210> 6783

<211> 267

<212> PRT

<213> B.fragilis

<400> 6783

Asn Ile Arg Val Ala Met Ile Lys Lys Ser Asp Lys Lys Asn Val Lys
 1 5 10 15
 Lys Cys Ile Arg Thr Asn Phe Asn Phe Tyr Leu Cys Pro Asn Leu Tyr
 20 25 30
 Ala Met Leu Val Pro Thr Met Thr Thr Glu Glu Val Cys Lys Glu Ile
 35 40 45
 Lys Asn Asp Tyr Pro Ala Phe Tyr Glu Lys Met Leu Asp Asn Lys Ala
 50 55 60
 Ser Asn Tyr Arg Lys Phe Ile Lys Ala Val Leu Phe Pro Val Ile His
 65 70 75 80
 Gln Phe Ser Trp Lys Ser Ser Ser Gly Asn Met Trp Asn Val Ile Met
 85 90 95
 Leu Ala Arg Tyr Arg Asn Glu Arg Lys Cys Pro Gly Ile Val Pro Tyr
 100 105 110

Leu Lys Tyr Glu Asn Trp Gly Met Gly Ile Ile Tyr Pro Lys Asn Ile
 115 120 125
 Tyr Ser Asn Leu Ser Ile Ile Asp Phe Lys Pro His Phe Trp Lys Arg
 130 135 140
 Tyr Arg Glu Arg Gln Leu Ile Pro Asn Gly Leu Glu Gly Ile Ser Phe
 145 150 155 160
 Asp Glu Gln Ile Lys Tyr Phe Phe Leu Asn Ser Gly Leu Phe Thr Phe
 165 170 175
 Asp Phe Arg Glu Gly Ser Asn Lys Gly His Glu Gly Phe Val Gly Tyr
 180 185 190
 Thr Lys Thr Gly Ile Phe Phe Gly Val Val Ile Lys Glu Leu Asp Tyr
 195 200 205
 Leu Cys Val Lys Thr Tyr Val Ser Ala Asn Met Leu Phe Asp Asn Gln
 210 215 220
 Ile Glu Ser Leu Asp Ser Ala Asp Glu Leu Arg Glu Lys Ile Leu Ser
 225 230 235 240
 His Pro Asp Tyr Phe Gln Lys Arg Gly Lys Leu Phe His Ile Met Asn
 245 250 255
 Asp Ser Ser Phe Trp Met Asp Glu Thr Ile Arg
 260 265

<210> 6784

<211> 287

<212> PRT

<213> B.fragilis

<400> 6784

Asn His Phe Ser Met Glu Ile Asp Glu Leu Pro Ser Gly Thr Gln Asp
 1 5 10 15
 Gln Lys Pro Asp Ile Asp Met Asn Glu Ile Val Gly Thr His Asp Ile
 20 25 30
 Leu Met Leu Cys Phe Asp Thr Leu Arg Tyr Asp Val Ser Val Ala Glu
 35 40 45
 Glu Ala Ser Gly Gly Thr Pro Val Leu Asn Ser Cys Gly Asn Gly Trp
 50 55 60
 Glu Lys Arg His Ala Pro Gly Asn Phe Thr Tyr Pro Ser His Phe Ala
 65 70 75 80
 Ile Phe Ala Gly Phe Leu Pro Ser Pro Ala Glu Pro His Met Leu Arg
 85 90 95
 Asn Arg Lys Trp Leu Phe Phe Pro Phe Gln Ala Gly Thr Gly Arg Ile
 100 105 110
 Pro Pro Glu Gly Ser Tyr Ala Phe Lys Glu Ala Thr Phe Val Gln Ser
 115 120 125
 Leu Ala Gln Val Gly Tyr Glu Thr Ile Cys Ile Gly Gly Val Asn Phe
 130 135 140
 Phe Ser Lys Arg Asn Asp Ile Gly Arg Val Phe Pro Gly Tyr Phe Asn
 145 150 155 160
 Lys Ser Tyr Trp Leu Pro Thr Phe Gly Cys Thr Asp Lys Asn Ser Ala
 165 170 175
 Ala Asn Gln Val Asp Phe Ala Val Asp Lys Leu Glu Lys Tyr Pro Ala
 180 185 190
 Asp Arg Lys Val Phe Met Tyr Ile Asn Phe Ser Ala Ile His Tyr Pro
 195 200 205
 Asn Cys His Tyr Val Glu Gly Lys Lys Lys Asp Asp Lys Glu Ser His
 210 215 220
 Ala Ala Ala Leu Arg Tyr Val Asp Ser Gln Leu Pro Arg Leu Phe Glu
 225 230 235 240
 Ala Phe Arg Arg Arg Ser Asp Thr Leu Val Ile Ala Leu Ser Asp His
 245 250 255

Gly Thr Cys Tyr Gly Glu Asp Gly Tyr Glu Tyr His Cys Ile Ser His
 260 265 270
 Glu Lys Val Tyr Thr Val Pro Tyr Lys His Phe Ile Leu Arg Lys
 275 280 285

<210> 6785

<211> 432

<212> PRT

<213> B.fragilis

<400> 6785

Thr Leu Tyr Ser Gln Lys Met Asn Glu Gln Gln Gln Ile Ser Arg Tyr
 1 5 10 15
 Val Ser Tyr Met Tyr Ser Tyr Pro His Lys Thr Ala Tyr Arg Thr Leu
 20 25 30
 Thr Pro Pro Val Ser Leu Ser Pro Tyr Leu Glu Arg Leu Glu Gly Arg
 35 40 45
 Glu Ala Ser Leu Tyr Phe His Ile Pro Phe Cys Ala His Lys Cys Gly
 50 55 60
 Tyr Cys Asn Leu Phe Ser Gln Gln Cys Cys Asp Ala Glu Arg Ile Ser
 65 70 75 80
 Leu Tyr Leu His Thr Met Arg Arg Gln Ala Glu Gln Leu Ser Val Ala
 85 90 95
 Ala Gln Gly Leu Lys Phe Thr Ser Phe Ala Val Gly Gly Gly Thr Pro
 100 105 110
 Leu Ile Leu Asp Glu Gly Gln Leu Glu Glu Leu Phe Cys Leu Ala Glu
 115 120 125
 Leu Phe Gly Val His Pro Ser Arg Val Phe Thr Ser Val Glu Thr Ser
 130 135 140
 Pro Glu Tyr Thr Gln Lys Ser Val Leu Arg Gln Leu Arg Ala Arg Gly
 145 150 155 160
 Val Glu Arg Leu Ser Met Gly Val Gln Ser Phe Asn Glu Thr Glu Leu
 165 170 175
 Lys Lys Leu Lys Arg Arg Pro Gly Leu Gly Thr Val Val Gly Ala Leu
 180 185 190
 Glu Asn Ile Val Glu Ala Gly Phe Pro Gln Phe Asn Leu Asp Leu Ile
 195 200 205
 Tyr Gly Ile Glu Gly Gln Thr Val Glu Ser Phe Met Arg Ser Leu Asn
 210 215 220
 Thr Ala Leu Thr Tyr Arg Pro Asn Glu Leu Phe Ile Tyr Pro Leu Tyr
 225 230 235 240
 Val Arg Pro Gly Thr Arg Ile Asp Val Arg Ser Thr Asp Asp Ile Gly
 245 250 255
 Tyr Ala Ile Tyr Lys Ser Ala Arg Glu Leu Leu Val Gly Gln Gly Phe
 260 265 270
 Val Gln Thr Ser Met Arg Arg Phe Val Arg Arg Glu Thr Thr Glu Thr
 275 280 285
 Glu Phe Ser Cys Gly Asp Glu Val Met Leu Ser Cys Gly Ala Gly Gly
 290 295 300
 Arg Ser Tyr Leu Gly Asn Leu His Tyr Ala Thr Pro Tyr Ala Val Arg
 305 310 315 320
 Gln Gln Ala Ile Ala Asp Glu Ile Asp His Tyr Ile Arg Thr Thr Asp
 325 330 335
 Phe Met Thr Ala Ala Asn Gly Phe Leu Leu Ser Thr Glu Glu Met Gln
 340 345 350
 Ile Arg Phe Ile Ile Lys Asn Leu Met Tyr His Arg Gly Val Asp Leu
 355 360 365
 Ala Glu Tyr Glu Lys Arg Phe Gly Glu Lys Pro Asp Arg Asn Leu Phe
 370 375 380

Arg Glu Phe Thr Asp Arg Gly Trp Ile Glu Glu Thr Gly Arg Ile Val
 385 390 395 400
 Arg Leu Thr Glu Glu Gly Met Ala Tyr Ser Asp Tyr Ile Gly Gln Ala
 405 410 415
 Phe Ile Ser Pro Ala Val Arg Lys Leu Met Ser Glu Tyr Val Tyr Pro
 420 425 430

<210> 6786

<211> 535

<212> PRT

<213> B.fragilis

<400> 6786

Val Met Asn Thr Lys Thr Lys Leu Leu Tyr Val Gly Phe Arg Ala Leu
 1 5 10 15
 Asn Thr Cys Cys Leu Tyr Ala Ala Phe Leu Met Ile Thr Ser Cys Gly
 20 25 30
 Asp Asn Val Val Asn Pro Asp Ser Pro Glu Pro Asp Gly Glu Asp Met
 35 40 45
 Ile Pro Val Thr Val Ser Arg Val Glu Asp Gly Ser Tyr Met Glu Ser
 50 55 60
 His Val Asp Thr Pro Asp Thr Thr Gly Gly Arg Thr Leu Val Asp Glu
 65 70 75 80
 Trp Val Pro Val Lys Glu Pro Pro Ala Ser Arg Ala Ile Pro Ala Ala
 85 90 95
 Val Pro Tyr Glu Gly Pro Ser Ala Val Arg Met Thr Leu Arg Glu Glu
 100 105 110
 Pro Gln Val Thr Thr Arg Ala Ala Thr Leu Gly Asn Asp Ile Tyr Phe
 115 120 125
 Arg Leu Ile Ala Phe Arg Lys Val Gly Ser Asn Tyr Val Phe Gln Ser
 130 135 140
 Ala Ala Asp Phe Thr Thr Asn Gly Ala Ser Ala Pro Thr Leu Arg Gln
 145 150 155 160
 Gly Asn Leu Leu Thr Arg Ala Gly Thr Val Arg Val Ile Gly Tyr Ser
 165 170 175
 Phe Asn Ser Thr Ala Ala Met Gly Thr Ile Pro Ser Ser Tyr Thr Tyr
 180 185 190
 Asn Ser Thr Ser Val Thr Ile Pro Asp Met Asn Ser Asp Phe Met Val
 195 200 205
 Tyr Asp Ser Gly Asp Ile Ala Asn Val Ser Thr Ile Ser His Asn Leu
 210 215 220
 Ser Val Ser Phe Thr Gln Lys Leu Cys Lys Leu Thr Val Lys Leu Ser
 225 230 235 240
 Leu Ser Gln Phe Gly Ser Asn Thr Phe Thr Asn Cys Thr Gly Val Tyr
 245 250 255
 Val Ser Gln Gly Gly Asn Ala Ser Ala Trp Thr Ile Gly Pro Ser Thr
 260 265 270
 Asn Asn Val Ser Ala Asn Thr Gly Asn Thr Pro Thr Phe Asn Ile Ala
 275 280 285
 Asn Asn Ser Thr Ala Thr Val Arg Leu Val Pro Phe Ser Gly Ser Arg
 290 295 300
 Ala Ile Thr Val His Ile Gly Thr Leu Lys Leu Ser Asn Tyr Phe Asn
 305 310 315 320
 Ala Asn Asn Arg Asn Ile Thr Ser Ser Gln Asn Val Gln Leu Leu Pro
 325 330 335
 Gly Lys Ser Tyr Thr Ile Thr Leu Lys Phe Glu Leu Gly Ile Gln Leu
 340 345 350
 Ala Ala Ser Asp Ile Asn Leu Thr Gln Asn Gly Cys Thr Ala Ser Asp
 355 360 365

Lys Asn Asp Leu Ala Lys Leu Arg Trp Ala Thr Gly Asn Leu Lys Ser
 370 375 380
 Thr Gly Asn Val Asn Tyr Val Trp Ala Ser Ser Gln Thr Glu Gly Gly
 385 390 395 400
 His Phe Tyr Ser Phe Asn Lys Leu Tyr Asp Gly Ser Thr Gly Asp Pro
 405 410 415
 Cys Ser Lys Leu Asn Thr Ala Tyr Tyr Gly Thr Ser Trp Arg Thr Pro
 420 425 430
 Thr Lys Asn Glu Leu Glu Lys Leu Val Arg Cys Thr Asp Arg Val Tyr
 435 440 445
 Asn Gly Gly Met Trp Phe Met Asn Asn Arg Leu Gly Leu Phe Leu Lys
 450 455 460
 Ala Ala Gly Met Arg Pro Glu Thr Gly Pro Gly Leu Glu Gly Thr Gly
 465 470 475 480
 Ser Gly Thr Ser Gly Val Tyr Leu Thr Ser Thr Leu Gly Asn Arg Lys
 485 490 495
 Asn Thr Cys Tyr Ala Leu Asp Phe Gly Thr Thr Tyr Ile Val Val Thr
 500 505 510
 Asp Thr Gly Ala Trp Asn Ala Leu Gln Ile Asn Gly Tyr Ser Val Arg
 515 520 525
 Cys Val Lys Gly Thr Lys Gln
 530 535

<210> 6787
 <211> 474
 <212> PRT
 <213> B.fragilis

<400> 6787
 Pro Cys Ile Asn Asn His Thr Ser Tyr Asn Tyr Tyr Lys Phe Arg Ile
 1 5 10 15
 Lys Met Asn Arg Glu Asn Lys Pro Leu Phe Leu Tyr Thr Phe Ile Thr
 20 25 30
 Val Phe Gly Gly Leu Ile Val Gly Leu Asn Met Ala Gly Ile Ser Gly
 35 40 45
 Ala Val Pro Phe Leu Gln Glu Gln Phe Met Leu Asp Asp Met Ala Leu
 50 55 60
 Gly Leu Val Val Ser Ile Leu Thr Val Gly Cys Leu Cys Gly Ala Leu
 65 70 75 80
 Leu Gly Gly Gly Phe Ser Asp Arg Tyr Gly Arg Gln Lys Val Met Phe
 85 90 95
 Ser Ser Ala Val Phe Phe Ile Val Ser Ser Leu Gly Cys Ala Leu Ser
 100 105 110
 Gly Asn Leu Val Ser Leu Leu Val Phe Arg Leu Ile Cys Gly Leu Gly
 115 120 125
 Ile Gly Val Ile Ser Ala Val Ala Pro Ile Tyr Ile Ser Glu Ile Ser
 130 135 140
 Pro Ala Arg Leu Arg Gly Thr Leu Val Ser Tyr Asn Gln Leu Ala Ile
 145 150 155 160
 Val Ile Gly Ile Leu Ile Ala Tyr Ile Val Asp Tyr Ile Leu Leu Asp
 165 170 175
 Tyr Glu Arg Asn Trp Arg Leu Met Leu Gly Phe Pro Phe Phe Ser
 180 185 190
 Val Ala Tyr Leu Leu Leu Leu Gly Ile Leu Pro Glu Ser Pro Arg Trp
 195 200 205
 Leu Ser Ala Arg Gly Lys Ala Gly Arg Ala Arg Gln Val Ala Ser Lys
 210 215 220
 Leu Asn Leu Glu Ala Gly Glu Met Thr Val Ser Asp Thr Asn Thr Gln
 225 230 235 240

Glu Gly Arg Asp Arg Ile Lys Val Thr Glu Leu Phe Lys Gly Asn Leu
 245 250 255
 Ala Lys Val Val Phe Ile Gly Ser Ile Leu Ala Ala Leu Gln Gln Ile
 260 265 270
 Thr Gly Ile Asn Val Ile Ile Asn Tyr Ala Pro Ser Ile Phe Glu Met
 275 280 285
 Thr Gly Val Ala Gly Asp Ile Ala Leu Val Gln Ser Ile Leu Val Gly
 290 295 300
 Val Val Asn Leu Leu Phe Thr Leu Ile Ala Val Trp Leu Val Asp Lys
 305 310 315 320
 Val Gly Arg Lys Ile Leu Leu Leu Cys Gly Ser Leu Gly Met Gly Ile
 325 330 335
 Ser Leu Leu Tyr Leu Val Tyr Thr Phe Val Val Pro Ala Ala Asn Gly
 340 345 350
 Ile Gly Ala Leu Ile Ala Val Leu Cys Tyr Ile Gly Phe Phe Ala Ala
 355 360 365
 Ser Leu Ala Pro Leu Met Trp Val Val Thr Ser Glu Ile Tyr Pro Ser
 370 375 380
 Arg Ile Arg Gly Thr Ala Met Ser Leu Ser Thr Gly Ile Ser Trp Leu
 385 390 395 400
 Cys Thr Phe Leu Thr Val Gln Phe Phe Pro Trp Ile Leu Asn Asn Leu
 405 410 415
 Gly Gly Ser Val Ala Phe Gly Ile Phe Ala Ile Phe Ser Ile Ala Ala
 420 425 430
 Phe Ala Phe Ile Leu Phe Cys Val Pro Glu Thr Lys Gly Lys Ser Leu
 435 440 445
 Glu Ala Ile Glu Lys Glu Leu Gly Val Asp Lys Glu Ala Glu Glu Asn
 450 455 460
 Val Lys Glu Glu His Ala Phe Ser Lys Ile
 465 470

<210> 6788
 <211> 184
 <212> PRT
 <213> B.fragilis

<400> 6788
 Gly Glu Cys Glu Arg Arg Thr Cys Phe Leu Glu Asn Ile Ile Asn Thr
 1 5 10 15
 Lys Leu Asp Ile Ser Met Lys Gln Ser Lys Arg Asn Val Trp Trp Ser
 20 25 30
 Val Cys Ala Gly Leu Leu Phe Cys Ser Trp Gly Cys Ser Ser Arg Val
 35 40 45
 Ser Asp Lys Pro Val Thr Leu Glu Thr Leu Leu Asp Glu Met Val Ser
 50 55 60
 Val Glu Glu Gln Ala Leu Tyr Pro Val Pro Ser Tyr Thr Cys Arg Gln
 65 70 75 80
 Glu Ser Ser Tyr Asp Arg Ala Ser Val Ser Pro Asp Ser Ala Gly Trp
 85 90 95
 Phe Ala Asn Ser Asp Gly Phe Gly Ile Lys Arg Val Asp Thr Val Ala
 100 105 110
 Gly Arg Ile Glu Lys Val Met Phe Asp Glu Val Gly Pro Gly Ala Ile
 115 120 125
 Thr Arg Ile Trp Ile Thr Thr Ile Asp Lys Arg Gly Thr Trp Arg Phe
 130 135 140
 Tyr Phe Asp Gly Ser Asp Gln Pro Gly Trp Ile Ile Pro Ala His Asp
 145 150 155 160
 Leu Leu Arg Ile Asn Val Pro Gly Leu Gly Lys Val Met Leu His Gly
 165 170 175

Thr His His Leu Tyr Ala Leu Trp
180

<210> 6789
<211> 61
<212> PRT
<213> B.fragilis

<400> 6789
Cys Asn Lys Asp Lys Thr Leu Phe Ser Ser Val Gln Ile Phe Ile His
1 5 10 15
Tyr Ser Asn Asn Gln Leu Phe Ile Ser Ser Ser Tyr Ile Gln Cys Thr
20 25 30
Glu Pro Lys Gln Cys Phe Lys Lys Gly Thr Ser Phe Glu Thr Gln Glu
35 40 45
Ser Phe Tyr Leu Ser Asn Leu His Lys Leu Thr Ala Lys
50 55 60

<210> 6790
<211> 503
<212> PRT
<213> B.fragilis

<400> 6790
Tyr Met Asn Arg Thr Phe Ile Met Arg Glu Cys Leu Gly Lys Ala Leu
1 5 10 15
Trp Leu Cys Phe Cys Leu Ser Ile Ala Gly Cys Ala Glu Asp Asp Arg
20 25 30
Met Thr Pro Leu Ser Ala Asp Ser Gly Asp Thr Ala Asp Glu Leu Ile
35 40 45
Pro Ile His Ile Ser Leu Thr Gly Asp Asn Asp Tyr His Ser Ser Ser
50 55 60
Phe Asn Asn Ala Ser Thr Arg Ser His Ser Pro Leu Ile Ala Glu Trp
65 70 75 80
Val Gly Val Lys Ala Phe Ser Pro Thr Arg Thr Gly Glu Gln Pro Asp
85 90 95
Tyr Asp Gly Pro Arg Ile Ala Ser Met Glu Leu Thr Glu Asp Thr Leu
100 105 110
Pro Arg Val Ser Thr Arg Ala Thr Val Pro Ala Gly Val Tyr Phe Arg
115 120 125
Leu Ile Val Phe Arg Lys Ser Gly Asn Asn Tyr Val Phe Gln Ser Val
130 135 140
Ala Asp Tyr Ala Ser Asn Gly Thr Gly Thr Pro Val Leu Lys Gln Gly
145 150 155 160
Lys Leu Leu Thr Arg Ser Gly Thr Ile Arg Met Val Gly Tyr Ser Phe
165 170 175
Asn Thr Ala Thr Ala Ala Asp Leu Gly Thr Met Leu Ser Thr Tyr Ala
180 185 190
Tyr Asn Ser Ser Thr Val Ser Ile Pro Asn Met Ser Lys Asp Phe Met
195 200 205
Thr Phe Asp Ser Gly Asp Ile Thr Asn Val Asn Ser Leu Ser His Asn
210 215 220
Leu Pro Val Ser Phe Asn Gln Lys Leu Cys Lys Leu Thr Ile Thr Ile
225 230 235 240
Ser Pro Thr Gly Phe Pro Ser Asn Thr Ile Thr Asn Cys Thr Gly Val
245 250 255
Tyr Val Lys Gln Gly Gly Asn Ser Thr Ser Trp Lys Ile Gly Pro Ser
260 265 270
Thr Asn Val Val Ala Thr Asn Thr Asn Asn Thr Ala Ala Phe Ser Pro

275		280		285
Ser Thr Ala Leu Ser Thr Thr Ile Arg Met Val Pro Phe Ala Gly Ala				
290		295		300
Arg Thr Ile Thr Val His Phe Asn Thr Leu Thr Val Gly Gly Arg Ile				
305		310		315
Val Asn Asn Asn Thr Glu Ile Thr Ser Thr Gln Ser Val Gln Leu Lys				
	325		330	335
Glu Gly Lys Ser Tyr Thr Leu Lys Ile Gln Phe Lys Lys Gly Pro Gly				
	340		345	350
Ile Asn Val Leu Glu Ser Asp Ile Asn Leu Thr Gly Asn Gly Cys Thr				
	355		360	365
Ala Gln Asp Lys Lys Asp Leu Ala Lys Leu Ile Trp Ala Asp Gly Asn				
	370		375	380
Leu Lys Ser Thr Gly Asn Ser Asn Tyr Val Trp Thr Thr Ser Thr Asp				
385		390		395
Arg Gly Tyr Tyr Tyr Thr Trp Tyr Ser Thr Tyr Thr Gly Asn Thr Ser				
	405		410	415
Gln Asn Asn Thr Asp Pro Cys Ser Lys Leu Asn Val Ser Thr Tyr Gly				
	420		425	430
Thr Gly Trp Arg Thr Pro Ser Arg Asn Glu Leu Thr Lys Leu Ser Arg				
	435		440	445
Cys Thr Asn Lys Ala Lys Val Asn Asn Gly Met Trp Phe Met Asn Ser				
	450		455	460
Ser Lys Gly Leu Phe Leu Pro Leu Ala Gly His Thr Pro Ser Ala Ser				
465		470		475
Gly Ala Asn Thr Gly Gly Asn Ala Ile Met Asn Gly Asn Arg His Gly				
	485		490	495
Asn Tyr Trp Cys Thr Lys Glu				
	500			

<210> 6791
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 6791

Pro Pro Leu Phe Ile Leu Phe Ser Phe Leu Pro Arg Ile Val Arg Ile				
1	5		10	15
Phe Phe Pro Asn Thr Met His Ile Gly Ile Val Leu Phe Thr Lys Pro				
	20		25	30
Met Pro Phe Ile Leu Tyr Ser Ala Val Val Leu Ile Tyr Ile Ser Asn				
	35		40	45
Tyr Ile Ser Leu Phe Tyr Arg Leu Tyr Leu Asn Ser Leu Ala Pro Thr				
	50		55	60
Pro Leu Ile Asn Ser Gly				
65		70		

<210> 6792
 <211> 109
 <212> PRT
 <213> B.fragilis

<400> 6792

Leu Phe Pro Ser Phe Asn Cys Thr Leu Trp Val Asp Val Ile Ser Val				
1	5		10	15
Leu Leu Phe Thr Ile Arg Pro Pro Thr Val Ser Val Leu Lys Cys Thr				
	20		25	30
Val Ile Val Leu Ala Pro Ala Asn Gly Thr Met Arg Met Val Val Leu				
	35		40	45

Arg Ala Val Leu Gly Leu Asn Ala Ala Val Leu Phe Val Leu Val Ala
 50 55 60
 Thr Thr Leu Val Glu Gly Pro Ile Phe His Asp Val Glu Phe Pro Pro
 65 70 75 80
 Cys Phe Thr Tyr Thr Pro Val Gln Leu Val Ile Val Leu Leu Gly Asn
 85 90 95
 Pro Val Gly Leu Met Val Ile Val Ser Leu His Asn Phe
 100 105

<210> 6793
 <211> 205
 <212> PRT
 <213> B.fragilis

<400> 6793
 Ile Lys Glu Thr Met Leu Leu Pro Trp Leu Asn Glu Glu Leu Ile Glu
 1 5 10 15
 Ala Gly Cys Asp Glu Ala Gly Arg Gly Cys Leu Ala Gly Ala Val Tyr
 20 25 30
 Ala Ala Ala Val Ile Leu Pro Lys Asp Phe Glu Asn Glu Leu Leu Asn
 35 40 45
 Asp Ser Lys Gln Leu Ser Glu Lys Gln Arg Tyr Ala Leu Arg Glu Val
 50 55 60
 Ile Glu Arg Asp Ala Val Ala Trp Ala Ile Gly Ile Val Ser Pro Glu
 65 70 75 80
 Glu Ile Asp Lys Ile Asn Ile Leu Asn Ala Ser Phe Leu Ala Met His
 85 90 95
 Arg Ala Val Asp Arg Leu Lys Thr Arg Pro Gln His Leu Leu Ile Asp
 100 105 110
 Gly Asn Arg Phe Lys Lys Tyr Pro Asp Ile Pro His Thr Thr Val Ile
 115 120 125
 Lys Gly Asp Gly Lys Tyr Leu Ser Ile Ala Ala Ala Ser Ile Leu Ala
 130 135 140
 Lys Thr Tyr Arg Asp Asp Tyr Met Asn Arg Leu His Gln Glu Phe Pro
 145 150 155 160
 Cys Tyr Asp Trp Glu His Asn Lys Gly Tyr Pro Thr Lys Lys His Arg
 165 170 175
 Ala Ala Ile Ala Gly His Gly Thr Thr Pro Tyr His Arg Met Thr Phe
 180 185 190
 Asn Leu Leu Gly Asp Gly Gln Leu Glu Leu Phe Ser Lys
 195 200 205

<210> 6794
 <211> 311
 <212> PRT
 <213> B.fragilis

<400> 6794
 Asn Ile Met Ser Lys Lys Ala Leu Leu Met Ile Leu Asp Gly Trp Gly
 1 5 10 15
 Leu Gly Asp His Gly Lys Asp Asp Val Ile Phe Asn Thr Ala Thr Pro
 20 25 30
 Tyr Trp Asp Tyr Leu Met Glu Thr Tyr Pro His Ser Gln Leu Gln Ala
 35 40 45
 Ser Gly Glu Asn Val Gly Leu Pro Asp Gly Gln Met Gly Asn Ser Glu
 50 55 60
 Val Gly His Leu Asn Ile Gly Ala Gly Arg Val Val Tyr Gln Asp Leu
 65 70 75 80
 Val Lys Ile Asn Leu Ser Cys Arg Asp Asn Ser Ile Leu Lys Asn Pro

[illegible]

<400> 6795

Gln	Thr	Lys	Gly	Gly	Asn	Lys	Met	Arg	Thr	Tyr	Leu	Tyr	Cys	Glu	Ala
1				5					10					15	
Gly	Phe	Val	Glu	Lys	Ala	Gln	Trp	Leu	His	Asn	Ser	Trp	Val	Asn	Val
			20					25					30		
Val	Cys	Pro	Asp	Ser	Ser	Asp	Phe	Lys	Phe	Leu	Thr	Glu	Thr	Leu	Lys
		35					40					45			
Val	Pro	Glu	Ser	Phe	Leu	Asn	Asp	Ile	Ala	Asp	Thr	Asp	Glu	Arg	Pro
	50					55					60				
Arg	Thr	Glu	Thr	Glu	Gly	Asn	Trp	Leu	Leu	Thr	Ile	Leu	Arg	Ile	Pro
65					70					75					80
Val	Gln	Asn	Ala	Gln	Ser	Ser	Ile	Pro	Tyr	Thr	Thr	Val	Pro	Ile	Gly
				85					90					95	
Ile	Ile	Thr	Asn	Asn	Glu	Ile	Ile	Val	Ser	Val	Cys	Tyr	His	Gln	Thr
			100					105					110		
Asp	Met	Ile	Pro	Asp	Phe	Ile	Glu	His	Thr	Arg	Arg	Lys	Gly	Ile	Glu
		115					120					125			
Val	Arg	Asn	Lys	Leu	Asp	Leu	Ile	Phe	Arg	Leu	Ile	Tyr	Ser	Ser	Ala
	130					135					140				
Val	Trp	Phe	Leu	Lys	Tyr	Leu	Lys	Gln	Ile	Asn	Ile	Asp	Ile	Thr	Ala
145					150					155					160
Ala	Glu	Lys	Glu	Leu	Glu	Arg	Ser	Ile	Arg	Asn	Glu	Asp	Leu	Leu	Arg
				165					170					175	
Leu	Met	Lys	Leu	Gln	Lys	Thr	Leu	Val	Tyr	Phe	Asn	Thr	Ser	Ile	Arg

[illegible]

<400> 6796
 Leu Arg Leu Gly Arg Arg Tyr Leu Ala Phe Leu Asn Gly Lys Lys Lys
 1 5 10 15
 Gln Leu Leu Phe Phe Val Ala Asn His Gly Glu Ile Val Arg Thr Arg
 20 25 30
 Asn Met Leu Phe Phe Phe Asn Val Gly Gly Val Leu Lys Phe Ala Leu
 35 40 45
 Cys Gly Ile Thr Lys Tyr Ala Gly Leu Leu Phe Val Phe Arg
 50 55 60

<400> 6797															
Pro	Glu	Lys	Thr	Glu	Ala	Pro	Ala	Arg	Ala	Asn	Pro	Phe	Phe	Gly	Trp
1				5					10					15	
His	Pro	Glu	His	Ser	Phe	Ser	Pro	Ile	Thr	Thr	Thr	Asp	Phe	Ala	Lys
			20					25					30		
Ala	Ala	Arg	Val	Glu	Leu	Glu	His	Arg	Gly	Asp	Gly	Ala	Thr	Gly	Trp
		35					40					45			
Ser	Met	Gly	Trp	Lys	Leu	Asn	Gln	Trp	Ala	Arg	Leu	Gln	Asp	Gly	Asn
	50					55					60				
His	Ala	Tyr	Lys	Leu	Phe	Gly	Asn	Leu	Leu	Lys	Asn	Gly	Thr	Leu	Asp
65					70					75				80	
Asn	Leu	Trp	Asp	Thr	His	Pro	Pro	Phe	Gln	Ile	Asp	Gly	Asn	Phe	Gly
				85					90					95	
Gly	Thr	Ala	Gly	Ile	Thr	Glu	Met	Leu	Leu	Gln	Ser	His	Met	Gly	Phe
			100					105					110		
Ile	Gln	Leu	Leu	Pro	Ala	Leu	Pro	Asp	Ala	Trp	Lys	Asp	Gly	Ser	Ile
		115					120					125			
Ser	Gly	Ile	Cys	Ala	Lys	Gly	Asn	Phe	Glu	Val	Asp	Leu	Ser	Trp	Lys
	130					135					140				
Asn	Gly	Gln	Leu	Ala	Glu	Ala	Thr	Ile	Phe	Ser	Lys	Ala	Gly	Glu	Pro
145					150					155					160

Cys Thr Val Arg Tyr Gly Asp Lys Thr Leu Ser Phe Lys Thr Ser Lys
 165 170 175
 Gly Lys Val Tyr Lys Leu Ala Leu Asp Ala Asp Arg Leu Val Ile Lys
 180 185 190

<210> 6798
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 6798
 Arg Lys Arg Thr Asn Gln Lys Val Arg Ser Tyr Ile Lys Ala Asp Leu
 1 5 10 15
 Ser Leu Phe Ser Lys Phe Arg Glu Asn Leu Ile Thr Phe Gly Gln Thr
 20 25 30
 Asn Leu Ile Asn Lys Ser Ala Trp Phe Arg Lys Glu Gln Glu Lys Asn
 35 40 45
 Asp Ile His Thr Val Thr Ser Asn Asn Tyr Ala Tyr Glu Val Glu Lys
 50 55 60
 Thr Asn Pro Leu Gln Thr Leu Phe Arg Lys Gln Asn Lys Ile Arg Asn
 65 70 75 80
 Pro Lys Thr Asn Tyr Gln Ile Asn Val
 85

<210> 6799
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 6799
 Pro Phe Ala Asn Arg Glu Arg Leu Ile Phe Leu Pro Pro Ser Ser Glu
 1 5 10 15
 Ala Ala Arg Phe Ile His Tyr Leu Leu Leu Phe Asn Lys Ile Val Val
 20 25 30
 Gln Arg Ala Val Ile Lys Lys Ile Ile Ile Ile Asn Ser Cys Ile Leu
 35 40 45
 Leu Lys Val Ile Ala Ser Leu Pro Arg Asp Ile Val Ile Leu
 50 55 60

<210> 6800
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 6800
 Phe Tyr Gln Ile Lys Ile Ser Pro Glu Glu Lys Tyr Phe Phe Arg Gly
 1 5 10 15
 Tyr Phe Cys Phe Ile Thr Gln Ser Ser Leu His Pro Glu Lys Tyr Ile
 20 25 30
 His His Thr Glu Ile Ser Lys Pro Asn Val Thr Ala Ile Arg Ile Leu
 35 40 45
 Leu Leu Thr Phe Tyr Tyr Leu Tyr Cys Lys Ile Gln Lys Val Ser Tyr
 50 55 60
 Leu Thr Phe Trp Tyr Phe Ser Thr Pro Thr Phe Leu Asn Ile Asn Thr
 65 70 75 80
 Ile Lys Gln Asn Arg Ile Glu Asn Arg Asn Glu Lys Thr Lys Pro
 85 90 95

<210> 6801

<211> 387
 <212> PRT
 <213> B.fragilis

<400> 6801

Asp	His	Thr	Ser	Arg	Ser	Leu	Glu	Lys	Ser	Leu	Leu	Tyr	Asp	Phe	Thr
1			5					10						15	
Asn	Ser	Gln	Lys	Thr	Val	Tyr	Met	Lys	Ile	Gly	Ile	Leu	Thr	Phe	His
		20						25				30			
Asp	Ala	His	Asn	Tyr	Gly	Ala	Met	Leu	Gln	Cys	Tyr	Ala	Leu	Gln	Gln
		35					40					45			
Phe	Leu	Phe	Lys	Lys	Gly	Tyr	Asn	Val	Glu	Val	Ile	Asp	Tyr	Arg	Pro
	50					55					60				
Ala	Phe	Tyr	Gln	Lys	Gln	Tyr	His	Arg	His	Ser	Leu	Cys	Pro	Trp	Ile
65					70					75					80
Gly	Lys	Asn	Pro	Val	Arg	Thr	Met	Lys	Ser	Ile	Tyr	Tyr	Asn	Tyr	Tyr
				85					90					95	
Leu	Phe	Asn	Lys	Arg	Cys	Ala	Ala	Phe	Ser	Asp	Phe	His	Asn	Arg	His
			100					105					110		
Leu	Tyr	Met	Ser	Ile	Pro	Ala	Thr	Arg	Thr	Asn	Ile	Pro	Gln	Ser	Tyr
		115					120						125		
Asp	Ala	Tyr	Ile	Val	Gly	Ser	Asp	Gln	Ile	Trp	Asn	Pro	Gln	Leu	Thr
	130					135					140				
Asn	Gly	Phe	His	Asp	Val	Tyr	Phe	Cys	Asp	Phe	Cys	Phe	Pro	Lys	Gly
145					150					155					160
Lys	Ser	Arg	Phe	Ile	Ala	Tyr	Ala	Pro	Ser	Met	Glu	Ile	Ser	Arg	Leu
				165						170					175
Ser	Thr	Gln	Glu	Ala	Glu	Tyr	Leu	Thr	Arg	Val	Leu	Asn	Cys	Phe	Asp
			180						185				190		
Ala	Leu	Ser	Val	Arg	Glu	Ser	Ser	Leu	Ile	Pro	Ile	Leu	Gln	Pro	Leu
		195					200					205			
Val	Ser	Gln	Pro	Ile	Gln	Gln	Val	Leu	Asp	Pro	Thr	Leu	Leu	Leu	Asp
	210					215						220			
Ala	Thr	Ala	Trp	Asn	Pro	Leu	Ile	Gly	Lys	Cys	Pro	Glu	Asn	Arg	Pro
225					230					235					240
Tyr	Val	Val	Leu	Tyr	Gln	Val	Arg	Glu	Asn	Pro	Ala	Val	Arg	Met	Lys
				245						250					255
Ala	Phe	Glu	Ile	Ala	Gln	Ser	Ile	Gly	Gly	Ile	Val	Val	Glu	Leu	Thr
			260					265					270		
Ala	Arg	Ile	Asp	Cys	His	Tyr	Ser	Thr	Lys	Tyr	Gln	Thr	Ala	Ser	Pro
		275						280					285		
Ala	Asp	Phe	Val	Thr	Tyr	Ile	Arg	Tyr	Ala	Thr	Tyr	Val	Val	Thr	Thr
	290					295						300			
Ser	Phe	His	Gly	Thr	Ala	Phe	Ser	Leu	Ile	Phe	Asn	Arg	Pro	Phe	Tyr
305					310					315					320
Thr	Phe	Ser	Leu	Gly	Asp	Asn	Phe	Asp	Ser	Arg	Ser	Ala	Ser	Leu	Leu
				325						330				335	
Glu	Ser	Val	Asn	Leu	Thr	Glu	Arg	Leu	Val	Cys	Pro	Asp	Glu	Gln	Phe
			340					345					350		
Glu	Ile	Ser	Leu	Ile	Asp	Phe	Lys	Gln	Ala	Asn	Lys	Arg	Leu	Lys	His
		355					360					365			
Leu	Arg	Lys	Gln	Ser	Cys	Asp	Phe	Leu	Arg	Gln	Ser	Leu	His	Glu	Arg
	370					375						380			
Gln	Glu	Gln													
385															

<210> 6802
 <211> 799
 <212> PRT

<213> B.fragilis

<400> 6802

Ile	Tyr	Leu	Phe	Pro	Val	Tyr	His	Ser	Tyr	Arg	Met	Lys	Arg	Cys	Leu
1				5					10					15	
Leu	Tyr	Ile	Leu	Cys	Cys	Phe	Gly	Val	Val	Gln	Leu	Ser	Ala	Gln	Pro
		20						25					30		
Ala	Asp	Asn	Ile	Arg	Asn	Ser	Phe	Val	Lys	Ala	Glu	Thr	Phe	Tyr	Lys
		35					40					45			
Ser	Gly	Asp	Ile	Asp	Glu	Ala	Cys	Arg	Ile	Leu	Glu	Glu	Asn	Leu	Ser
	50					55					60				
Ser	Phe	Gln	Gly	Thr	Met	His	Thr	Glu	Ala	Cys	Arg	Leu	Ala	Ala	Leu
65					70					75					80
Cys	Cys	Leu	Ala	Leu	Asp	Arg	Phe	Pro	Glu	Ala	Glu	Lys	Tyr	Val	Ser
			85						90					95	
Leu	Leu	Leu	Lys	Asp	Glu	Pro	Tyr	Tyr	Tyr	Ile	Ser	Leu	Gln	Asp	Pro
			100					105					110		
Glu	Arg	Phe	Ala	Asp	Met	Val	Arg	Lys	His	Arg	Glu	Thr	Lys	Val	Thr
		115					120						125		
Leu	Val	Thr	Ala	Ser	Gln	Gln	Val	Glu	Thr	Pro	Glu	Glu	Ala	Pro	Val
	130					135						140			
Pro	Val	Thr	Leu	Ile	Thr	Glu	Glu	Met	Ile	Arg	Ala	Ile	His	Ala	Arg
145					150					155					160
Cys	Leu	Arg	Asp	Val	Leu	Ile	Ala	Tyr	Val	Pro	Gly	Ile	Ser	Gly	Leu
			165						170					175	
Ser	Ser	Asn	Glu	Glu	Met	Asn	Leu	Ala	Met	Arg	Gly	Val	Tyr	Ser	Pro
		180						185					190		
Glu	Gln	Glu	Asn	Ile	Leu	Ile	Met	Gln	Asp	Gly	Gln	Arg	Leu	Asn	Ser
		195					200					205			
Tyr	Ile	Thr	Asn	Ala	Val	Ser	Pro	Asp	Tyr	Gly	Ile	Ser	Leu	Ala	Lys
	210					215					220				
Val	Lys	Gln	Ile	Glu	Val	Leu	Arg	Gly	Pro	Ala	Ser	Ser	Leu	Tyr	Gly
225					230					235					240
Ser	Val	Ala	Leu	Thr	Ala	Val	Ile	Asn	Ile	Val	Thr	Lys	Asp	Gly	Val
			245						250					255	
Asp	Val	Arg	Asn	Gly	Ser	Ile	Ser	Val	Ser	Ala	Gly	Asn	Arg	Gly	Gln
		260						265					270		
Leu	Ala	Ala	Asp	Leu	Leu	Leu	Gly	Lys	His	Asp	Met	Asn	Met	Asp	Phe
		275					280						285		
Met	Ala	Trp	Phe	Ser	Leu	Tyr	Arg	Ala	Thr	Gly	Glu	Ser	Val	Phe	Val
		290				295					300				
Pro	Ala	Glu	Lys	Gln	Tyr	Ala	Leu	Tyr	Pro	Arg	Asp	Gly	Phe	Ile	Arg
305					310					315					320
Leu	Asp	Asn	Tyr	Ser	Gly	Phe	Pro	Ala	Met	Asp	Gly	Gly	Ile	Lys	Leu
			325						330					335	
Gln	Arg	Gly	Asn	Leu	Leu	Phe	Ser	Phe	Ser	Met	Asn	Tyr	Ala	Lys	Lys
			340					345					350		
Arg	Gln	Pro	Tyr	Ser	Met	Trp	Leu	Phe	Ser	Ser	Pro	Tyr	Ser	Tyr	Glu
		355					360						365		
Arg	Phe	Arg	Thr	Phe	Asp	Gly	Ser	Gly	Pro	Gly	Tyr	Ser	Arg	Trp	Ser
	370				375						380				
Ala	Arg	Glu	Gln	Ala	Val	Tyr	Ser	Arg	Thr	Trp	Gln	Arg	Ile	Thr	Phe
385					390					395					400
Ser	Thr	Ala	Phe	Tyr	Thr	Asp	Trp	Asn	Lys	Asn	Val	His	Tyr	Glu	Thr
			405						410					415	
Ser	Gly	Asp	Thr	Leu	Gln	Asp	Tyr	Pro	Ile	Phe	Pro	Asn	Tyr	Asp	Tyr
		420					425						430		
Gln	Pro	Ile	Ile	Tyr	Pro	Thr	Arg	Gly	Ala	Phe	Gln	Tyr	Ile	Arg	Trp
		435					440						445		

Met Asp Phe Asn Val Gly Phe Asn Gly Arg Val Asn Tyr Ala Tyr Asp
 450 455 460
 Trp Gly Lys Leu Gly Lys Gly Asn Met Leu Gly Gly Val Glu Trp Asn
 465 470 475 480
 Arg Tyr Thr Leu Tyr Asp Ser Glu Tyr Leu Glu Gly Met Asn Phe Lys
 485 490 495
 Glu Ile Val Arg Thr Trp Ile Glu Lys Arg Leu Tyr Thr Gly His Glu
 500 505 510
 Met Asn Thr Asp Ala Phe Leu Gln Ile Lys His Asn Leu His Lys Asn
 515 520 525
 Trp Ile Val Asn Ala Gly Ile Arg Tyr Asp Tyr Lys Arg Arg Ser Asn
 530 535 540
 Lys Arg Thr Leu Gln Ala Phe Ser Pro Arg Leu Ser Leu Ile Tyr Leu
 545 550 555 560
 Arg Asn Gly Leu Asn Ile Lys Ala Ser Tyr Ser Arg Ala Phe Val Asp
 565 570 575
 Ala Pro Tyr Tyr Tyr Arg Asn Asn Glu Met Asp Thr Tyr Ser Gly Gly
 580 585 590
 Glu Asn Leu Gln Ala Glu Tyr Leu Ser Ser Tyr Gln Val Thr Cys Ala
 595 600 605
 Tyr His His Ser Pro Ser His Ile Asp Val Glu Cys Asn Leu Phe Tyr
 610 615 620
 Asn Arg Ala Ser His Phe Leu Phe Thr Gln Pro Glu Thr Arg Val Tyr
 625 630 635 640
 Glu Asn Ala Gly Ser Leu Asp Met Gly Gly Val Glu Val Val Ala Arg
 645 650 655
 Tyr Lys Ala Asp Arg Leu Ser Leu Asp Gly Asn Leu Cys Phe Gln Lys
 660 665 670
 Val Leu Asn Tyr Thr Asn Phe Phe Val Thr Asp Gly Ser Val Asn Asn
 675 680 685
 Val Pro Gly Phe Ser Met Asn Leu Val Ala Asn Tyr Phe Leu Leu Lys
 690 695 700
 Lys Lys Val Gln Ser Trp Ser Ala His Leu Lys Leu Asn Cys Ser Ser
 705 710 715 720
 His Cys Tyr Thr Gln Ile Ser Val Leu Glu Asp Gly Leu Asn Gly Asp
 725 730 735
 Ala Thr Asn Tyr Thr Val Arg Leu Pro Gly Tyr Ala Val Phe Ser Phe
 740 745 750
 Thr Thr Arg Tyr Lys Tyr Lys Arg Ile Glu Gly Ser Leu Gly Ile Glu
 755 760 765
 Asn Leu Phe Asn Asn Arg Tyr Glu Cys Gly Gly Ala Thr Val Pro Ile
 770 775 780
 Arg Gln Lys Gly Arg Trp Ile Ser Ala Ser Ile Leu Tyr Asn Phe
 785 790 795

<210> 6803

<211> 67

<212> PRT

<213> B.fragilis

<400> 6803

Leu Gln Phe Pro Ser Pro Glu Gly Lys Glu Asp Ser Val Pro Leu Pro
 1 5 10 15
 Ile Pro Gly Tyr Ala Phe Asn Thr Met Ala His Asn Tyr Pro Gly Leu
 20 25 30
 Ala Asp Ile Leu Lys Arg Leu Gly Ile Asn Glu Val Asn Glu Val Asn
 35 40 45
 Ala Ile Leu Arg Leu Pro Asp Tyr Glu Arg Lys Gly Thr Val Gln Pro
 50 55 60

Leu Phe Ser
65

<210> 6804
<211> 954
<212> PRT
<213> B.fragilis

<400> 6804

Ile	Leu	Leu	Pro	Lys	Asn	Val	Ser	Ala	Met	Lys	Lys	Ile	Val	Phe	Leu
1				5					10					15	
Ile	Met	Cys	Leu	Cys	Ser	Val	Tyr	Ala	Asn	Ser	Gln	Glu	Gly	Ile	Pro
			20					25					30		
Phe	Phe	Val	Asn	Tyr	Pro	Ala	Ser	Val	Tyr	Gln	Ala	His	Asn	Arg	Asn
		35				40					45				
Phe	Asp	Val	Val	Cys	Asp	Ser	Cys	Gly	Asn	Val	Tyr	Phe	Ala	Asn	Phe
	50				55					60					
Glu	Gly	Ile	Leu	His	Tyr	Asp	Tyr	Asn	Arg	Trp	Glu	Thr	Ile	Tyr	Thr
65				70					75					80	
Pro	Gly	Phe	Ser	Arg	Val	Thr	Arg	Leu	Phe	Arg	Asp	Ser	Glu	Gly	Arg
			85					90						95	
Ile	Trp	Val	Gly	Gly	Tyr	Asn	Val	Phe	Gly	Arg	Ile	Glu	Arg	Asp	Gly
		100						105					110		
Arg	Gly	Cys	Ile	Thr	Leu	Arg	Thr	Leu	Leu	Ser	Asp	Leu	Asp	Thr	Asp
		115				120						125			
Ser	Leu	Gly	Glu	Leu	Glu	Asp	Met	Ala	Glu	Ile	Asp	Lys	Arg	Ile	Tyr
	130					135					140				
Leu	Lys	Ala	Thr	Ser	Gly	Arg	Tyr	Tyr	Thr	Val	Gln	Ser	Asp	Ser	Ile
145				150						155				160	
Leu	Thr	Pro	Val	Gln	Val	Leu	Pro	Ala	Gln	Leu	Gln	Glu	Lys	Trp	Arg
			165					170						175	
Asn	Gln	Ser	Ser	Val	Ser	Met	Asn	Arg	Ala	Phe	Ser	Leu	Pro	Gly	Gly
		180					185						190		
Glu	Thr	Ile	Ser	Ile	Asn	Ser	Ala	His	Gly	Leu	Ile	Met	Asp	Asp	Ser
	195					200						205			
Gly	Lys	Lys	Glu	Arg	Phe	Ser	Val	Thr	Glu	Arg	Asn	Gly	Leu	Cys	Ser
	210				215						220				
Asn	Ala	Val	Ser	Gly	Ile	Ala	Ala	Asp	Gly	Arg	Gly	Asn	Leu	Trp	Gly
225				230					235					240	
Ala	Thr	Asp	Asn	Gly	Val	Phe	His	Val	Phe	Ile	Pro	Ser	Leu	Phe	Ser
			245					250						255	
Arg	Tyr	Thr	Ser	Gly	Glu	Gly	Leu	Lys	Gly	Glu	Val	Ile	Ser	Ala	Val
		260					265						270		
Ser	Tyr	Lys	Gly	Met	Ile	Tyr	Thr	Gly	Thr	Leu	Gln	Gly	Leu	Tyr	Val
	275					280						285			
Leu	Lys	Gln	Asn	Thr	Phe	Val	Pro	Val	Gln	Gly	Ile	Ser	Gln	Ala	Cys
	290				295						300				
Trp	Arg	Leu	Cys	Leu	Ser	Pro	Gln	Gly	Glu	Leu	Tyr	Ala	Ala	Ser	Gly
305				310						315				320	
Asp	Gly	Val	Tyr	Val	Ile	Arg	Asp	Tyr	Asn	His	Ser	Glu	Lys	Leu	Thr
			325						330					335	
Asp	Met	Ala	Ala	Tyr	Ser	Leu	Ala	Phe	Ile	Gly	His	Thr	Asn	Leu	Leu
		340						345					350		
Met	Gly	Thr	Met	Asp	Gly	Ile	Tyr	Gln	Tyr	Ser	Ala	Asp	Glu	Glu	Arg
	355					360						365			
Ile	Lys	Lys	Ile	Ser	Asp	Val	Glu	Lys	Val	Val	Arg	Leu	Glu	Val	Lys
	370				375						380				
Lys	Asp	Arg	Ser	Val	Trp	Ala	Lys	Thr	Leu	Tyr	Gly	Glu	Ile	Tyr	Leu
385					390					395					400

Arg Glu Glu Gly Glu Ser Ser Phe Val Leu Gln Asp Arg Glu Ser Glu
 405 410 415
 Glu Val Met Thr Glu Tyr Thr Asp Asn Asp Gly Cys His Trp Gln Thr
 420 425 430
 Asn Leu Lys Gly Lys Glu Val Gln Val His His Ser Gln Ile Asp Thr
 435 440 445
 Glu Lys Phe Asn Gln Cys Leu Tyr Ala Ile Arg Asn Tyr Val Val Arg
 450 455 460
 Val Ile Tyr Ile Glu Glu Asp Arg Ala Ala Trp Phe Gly Gly Asp Phe
 465 470 475 480
 Gly Leu Ile Arg Met Asp Leu Glu Lys Ala Arg Thr Phe Thr Pro Val
 485 490 495
 Ala Pro Arg Ile Tyr Leu Arg Glu Ile Cys Leu Asn Arg Asp Ser Val
 500 505 510
 Tyr Trp Gly Gly Asp Leu Pro Glu Glu Ser Gly Gly Ala Asp Trp Gln
 515 520 525
 Ile Asn Ser Thr Ala Pro Arg Leu Gly Asn Asp Val Arg Ser Ile Arg
 530 535 540
 Phe Ser Phe Ala Thr Asp Ala Pro Cys Phe Thr Gly Ser Asn Glu Tyr
 545 550 555 560
 Arg Tyr Arg Leu Val Gly Tyr Asp Pro Glu Trp Ser Ser Trp Asp Pro
 565 570 575
 Gly Thr Val Lys Glu Tyr Ala Asn Leu Ser Ser Gly Thr Tyr Thr Phe
 580 585 590
 Cys Val Arg Ala Arg Asp Ile Tyr Gly Thr Glu Ser Glu Met Asn Gln
 595 600 605
 Phe Arg Phe Ser Leu Leu Pro Pro Phe Tyr Leu Gln Trp Tyr Cys Leu
 610 615 620
 Ile Leu Tyr Ala Val Ala Phe Gly Met Leu Leu Phe Leu Leu Phe Lys
 625 630 635 640
 Trp Arg Met Arg Ser Leu Leu Lys Glu Lys Glu Arg Leu Glu Ala Leu
 645 650 655
 Val Gly Gln Arg Thr Lys Gln Leu Val His Gln Lys Asn Glu Ile Glu
 660 665 670
 Glu Lys Ser Leu Lys Leu Glu Lys Ala Leu Lys Glu Leu Gly Gln Ala
 675 680 685
 Gln Asp Glu Leu Val Arg Gln Glu Lys Met Ala Thr Val Gly Lys Leu
 690 695 700
 Thr Gln Gly Leu Ile Asp Arg Ile Leu Asn Pro Leu Asn Tyr Ile Asn
 705 710 715 720
 Asn Phe Ser His Leu Thr Ser Gly Leu Leu Lys Asp Leu Tyr Gln Asn
 725 730 735
 Leu Glu Ser Val Lys Glu Leu Leu Asp Glu Asp Thr Tyr Leu Asp Ser
 740 745 750
 Val Asp Val Ile Asn Met Met Arg Asp Asn Leu Glu Lys Ile Glu Glu
 755 760 765
 His Gly Ser Asn Thr Thr Arg Val Leu Lys Ala Met Glu Glu Ile Leu
 770 775 780
 Arg Asp Arg Asn Arg Gln Leu Glu Lys Thr Glu Leu Ile Gly Leu Cys
 785 790 795 800
 Arg Lys Asp Met Glu Leu Leu Ser Ser Tyr Tyr Gln Lys Glu Ile Thr
 805 810 815
 Ala Met His Ile Ala Val Arg Thr Ser Leu Pro Asp Asn Pro Leu Phe
 820 825 830
 Ile Asp Gly Asn Ala Glu Gln Leu Gly Lys Thr Ile Met Ser Leu Leu
 835 840 845
 Asn Asn Gly Met Tyr Ala Ile Ala Lys Lys Tyr Gly Lys Lys Ala Tyr
 850 855 860
 Pro Ala Glu Ile Gly Leu Ala Leu Glu Ser Lys Asp Gly Gln Ala Val

865		870		875		880
Ile Arg Leu Tyr Asp	Asn Gly Val Gly	Ile Glu Gln Ser Ile	Leu Asp			
	885		890			895
Lys Ile Phe Asp Pro	Phe Phe Thr Thr	Lys Thr Thr Gly	Glu Ala Ala			
	900		905			910
Gly Ile Gly Leu Tyr	Leu Ser Lys	Glu Ile Ile Leu	Asn His His Gly			
	915		920			925
Gln Ile Ala Val Arg	Ser Glu Lys	Asp Glu Leu Thr	Glu Phe Thr Ile			
	930		935			940
Thr Leu Pro Leu Trp	Glu Glu Lys	Ser Val				
945	950					

<210> 6805

<211> 343

<212> PRT

<213> B.fragilis

<400> 6805

Ser Met Ile Pro	Lys Val Ser Val	Ile Val Pro	Ile Tyr Asn	Val Glu
1	5	10		15
Lys Tyr Leu Asp	Gln Cys Val Gln	Ala Leu Leu	Ala Gln Thr	Leu Ser
	20	25		30
Asp Ile Glu Ile	Ile Leu Ile Asp	Asp Glu Ser	Pro Asp Asn	Cys Pro
	35	40		45
Lys Ile Cys Asp	Asp Tyr Ala	Gln Tyr Pro	Asn Ile Lys	Val Ile
	50	55		60
His Lys Lys Asn	Ala Gly Leu	Gly Met Ala	Cys Asn Ser	Gly Leu Asp
	65	70		75
Val Ala Thr Gly	Glu Tyr Val Ala	Phe Cys Asp	Ser Asp Asp	Tyr Val
	85	90		95
Asp Ser Asp Met	Tyr Met Thr Met	Tyr Asn Val	Ala Gln Lys	Tyr Thr
	100	105		110
Cys Asp Ala Val	Phe Thr Gly Leu	Lys Arg Ile Thr	Met Ala Gly	Ile
	115	120		125
Pro Thr Gly Thr	Val Thr His Gln	Lys Glu Phe	Lys Leu Tyr	Lys Asn
	130	135		140
Lys Asn Glu Ile	His Thr Leu Leu	Lys Asp Leu	Ile Ala Ser	Asp Pro
	145	150		155
Tyr Ala Arg Glu	Glu Arg Ala Ile	Gln Val Ser	Ala Lys Val	Val Leu
	165	170		175
Tyr Arg Arg Asn	Leu Ile Glu Lys	Lys His Leu	Arg Phe Val	Ser Glu
	180	185		190
Arg Ile Leu Pro	Ser Glu Asp Leu	Ile Phe Asn	Val Asp Val	Leu Ala
	195	200		205
Asn Ser Asn Ile	Val Cys Val Leu	Pro Gln Thr	Phe Tyr Asn	Tyr Arg
	210	215		220
Thr Asn Pro Ile	Ser Ile Ser His	Thr Ile Lys	Lys Asp Lys	Phe Ser
	225	230		235
Leu Phe Lys Gln	Leu Tyr Ile Glu	Ile Thr Asp	Arg Cys His	Arg Leu
	245	250		255
Gly Val Glu Asp	Asn Val Gln Leu	Arg Ile Gln	Arg Met Phe	Leu Gly
	260	265		270
Tyr Thr Arg Asn	Tyr Ile Cys Asn	Ile Leu Asn	Ser Ser Ile	Thr Asn
	275	280		285
Ile Glu Lys Lys	Gln Ile Thr Ser	Ser Ile Cys	Lys Asp Gly	Ile Trp
	290	295		300
Lys Pro Ile Trp	Lys Thr Tyr Pro	Leu Ser Val	Met Pro Leu	Pro His
	305	310		315
Arg Ile Phe Thr	Phe Ala Met Arg	His Asn Phe	Tyr Ser Leu	Leu Leu

Val Leu Ala Lys Ile Lys Lys
340

330

335

<210> 6806
<211> 76
<212> PRT
<213> B.fragilis

<400> 6806
Lys Lys Glu Pro Glu Ala Phe Ile Gln Ile Asn Tyr Ala Asp Ser Tyr
1 5 10 15
Leu Arg Phe Ser Leu Ile Cys Tyr Gly Pro Gly Asn Lys Gly Gln Gln
20 25 30
Asn Ile Ala Lys Gln Asn Ser Asn Arg Ser Ala Arg Ile Lys Thr Glu
35 40 45
Lys Arg Ser Ala Pro Leu Pro Leu Arg Gln Thr Arg Ser Leu Pro Arg
50 55 60
Tyr Cys Trp Pro Cys Asn Ile Ala Ile His Asp Phe
65 70 75

<210> 6807
<211> 143
<212> PRT
<213> B.fragilis

<400> 6807
Ala Met Thr Leu Leu Gln Phe Arg Pro Val Asp Gly Arg Leu Asp Glu
1 5 10 15
Ile Leu Ser Met Leu Met His Ser Arg Glu Val Ala Ser His Pro Ser
20 25 30
Leu Ser Tyr Ala Ile Arg Leu Val Ser Glu Glu Ile Ile Val Asn Ile
35 40 45
Leu Asn Tyr Ala Tyr Pro Gln Gln Ala Glu Gly Tyr Leu Thr Leu Cys
50 55 60
Leu Trp Asp Glu Asp Gly Glu Ile Thr Leu Glu Phe Ile Asp Gly Gly
65 70 75 80
Ile Pro Phe Asn Pro Leu Asp Lys Ala Asp Pro Asp Ile Ser Leu Pro
85 90 95
Leu Glu Gln Arg Glu Ile Gly Gly Leu Gly Ile Phe Leu Val Arg Glu
100 105 110
Met Met Asp Asp Val Ala Tyr Thr Tyr Val Asn Lys Glu Asn Arg Leu
115 120 125
Thr Ile Lys Lys Lys Tyr Leu Gln Pro Thr Asp Glu Pro Val Ser
130 135 140

<210> 6808
<211> 516
<212> PRT
<213> B.fragilis

<400> 6808
Tyr His Met Pro Ser Asp Ser Gln Asn Asn Lys Arg Ile Ala Gln Asn
1 5 10 15
Thr Leu Leu Leu Tyr Phe Arg Met Leu Phe Leu Met Leu Val Ser Leu
20 25 30
Tyr Thr Ser Arg Val Asn Leu Asn Ala Leu Gly Ile Glu Asp Phe Gly
35 40 45
Ile Tyr Asn Val Val Gly Gly Leu Val Ala Met Phe Ser Ile Ile Ser

50	55	60
Gly Ser Leu Val Ser Ser Ile Ser Arg Phe Ile Thr Phe Glu Leu Gly		
65	70	75
Thr Glu Asn Lys Glu Lys Leu Lys Lys Val Phe Ser Thr Ala Val Ser		80
	85	90
Ile Gln Phe Phe Leu Val Ile Ile Val Ile Leu Ala Glu Thr Ile		95
	100	105
Gly Leu Trp Phe Leu Asn Asn Lys Met Val Ile Pro Glu Glu Arg Ile		110
	115	120
Leu Ala Ala Asn Ile Ile Tyr Gln Phe Ser Ile Ile Ser Phe Ala Leu		125
	130	135
Ser Leu Met Ser Ile Pro Tyr Thr Gly Thr Ile Val Ala His Glu Lys		140
145	150	155
Met Ser Ala Phe Ala Tyr Ile Ser Ile Phe Asp Val Ile Gly Lys Leu		160
	165	170
Ala Val Ala Leu Thr Ile Ser Ile Ala Pro Ile Asp Lys Leu Ile Trp		175
	180	185
Phe Ala Gly Phe Ile Val Phe Asn Ser Thr Ile Ile Gln Ser Ile Tyr		190
	195	200
Ile Phe Tyr Cys Lys Arg His Phe Glu Glu Cys Thr Tyr His Phe Ile		205
	210	215
Phe Asp Lys Ser Leu Leu Lys Asn Met Phe Gly Phe Ala Gly Trp Asn		220
225	230	235
Phe Ile Gly Ser Ile Ala Ala Ile Leu Arg Asp Gln Gly Gly Asn Ile		240
	245	250
Val Ile Asn Met Phe Cys Gly Pro Ala Val Asn Ala Ala Arg Gly Val		255
	260	265
Ala Met Gln Val Asn Asn Ala Val Ser Gly Phe Val Ser Asn Phe Gln		270
	275	280
Thr Ala Leu Asn Pro Gln Ile Thr Lys Ser Tyr Ala Ser Gly Asn Tyr		285
	290	295
Asp Tyr Met Met Gln Leu Ile Phe Gln Gly Ala Arg Leu Ser Tyr Tyr		300
305	310	315
Ile Leu Leu Ile Leu Ala Leu Pro Ile Ile Ser Asn Thr His Phe Ile		320
	325	330
Leu Gln Leu Trp Leu Gly Gln Val Pro Lys His Thr Val Leu Phe Val		335
	340	345
Gln Leu Val Leu Phe Phe Thr Met Ser Glu Ser Leu Ala Asn Pro Leu		350
	355	360
Ile Asn Ala Met Leu Ala Thr Gly Lys Ile Lys Lys Phe Gln Ile Ile		365
	370	375
Val Gly Gly Leu Asn Leu Val Asn Leu Pro Leu Ser Tyr Ile Cys Leu		380
385	390	395
Arg Leu Gly Cys Ile Pro Glu Ser Val Val Ile Ile Ala Ile Ile Ile		400
	405	410
Ser Met Ile Cys Glu Met Ala Arg Val Ile Met Leu Arg Asn Met Ile		415
	420	425
His Phe Pro Ala Arg Ser Phe Leu Lys Lys Val Tyr Phe Asn Val Ile		430
	435	440
Phe Val Thr Ile Thr Ala Ser Ile Leu Pro Leu Tyr Leu His Phe Ile		445
	450	455
Leu Glu Glu Asn Ile Tyr Thr Phe Thr Leu Ile Ser Val Val Ser Phe		460
465	470	475
Ser Cys Thr Leu Leu Ser Ile Leu Tyr Ile Gly Cys Ser Ser Glu Glu		480
	485	490
Arg Val Met Val Phe Ser Lys Val Lys Val Ile Val Asn Lys Val Ser		495
	500	505
Lys Arg Tyr Lys		510
515		

<210> 6809
 <211> 150
 <212> PRT
 <213> B.fragilis

<400> 6809

Ser Gln Phe Thr His Thr Asn His Met Thr Ile Ala Val Asp Phe Asp
 1 5 10 15
 Gly Thr Ile Val Glu His Arg Tyr Pro Lys Ile Gly Glu Glu Ile Pro
 20 25 30
 Phe Ala Thr Glu Thr Leu Lys Ile Leu Ala Gln Glu Arg His Lys Leu
 35 40 45
 Ile Leu Trp Thr Val Arg Glu Gly Glu Leu Leu Glu Glu Ala Ile Glu
 50 55 60
 Trp Cys Arg Gln Arg Gly Val Phe Phe Tyr Ser Val Asn Lys Asp Tyr
 65 70 75 80
 Pro Glu Glu Glu Lys Ser His Asn Gly Phe Ser Arg Lys Leu Lys Ala
 85 90 95
 Asp Leu Phe Ile Asp Asp Arg Asn Leu Gly Gly Leu Pro Asp Trp Gly
 100 105 110
 Thr Ile Tyr Gln Met Ile His Glu Gln Lys Pro Tyr Glu Pro Val Leu
 115 120 125
 Cys Asp Arg Gln Lys Pro Thr Gly Asp Leu Ser Trp Ile Glu Lys Leu
 130 135 140
 Leu Gly Lys Arg Asn Lys
 145 150

<210> 6810
 <211> 354
 <212> PRT
 <213> B.fragilis

<400> 6810

Arg Lys Arg Leu Thr Met Asn Asn His Val Val Ile Met Ala Gly Gly
 1 5 10 15
 Ile Gly Ser Arg Phe Trp Pro Met Ser Thr Pro Glu Cys Pro Lys Gln
 20 25 30
 Phe Ile Asp Ile Leu Gly Cys Gly Lys Thr Leu Ile Gln Leu Thr Val
 35 40 45
 Glu Arg Phe Gly Asn Val Cys Pro Gln Glu Asn Met Trp Val Val Thr
 50 55 60
 Ser Glu Lys Tyr Ile Asp Thr Ile Arg Glu Gln Leu Pro Gly Ile Pro
 65 70 75 80
 Glu Ser Asn Ile Leu Ala Glu Pro Cys Pro Arg Asn Thr Ala Pro Cys
 85 90 95
 Ile Ala Tyr Ala Cys Trp Lys Ile Lys Lys Lys Tyr Pro Glu Ala Asn
 100 105 110
 Ile Val Val Thr Pro Ser Asp Gln Val Val Ile Asp Thr Thr Glu Phe
 115 120 125
 Arg Arg Val Ile Glu Lys Ala Leu Leu Phe Thr Asp Lys Ser Ser Ala
 130 135 140
 Ile Ile Thr Leu Gly Ile Lys Pro Ala Arg Pro Glu Thr Gly Tyr Gly
 145 150 155 160
 Tyr Ile Ala Ala Gly Glu Pro Ile Thr Arg Asp Lys Glu Ile Phe His
 165 170 175
 Val Glu Ala Phe Lys Glu Lys Pro Asp Lys Glu Thr Ala Glu Lys Tyr
 180 185 190
 Leu Ala Ala Gly Asn Tyr Phe Trp Asn Ala Gly Ile Phe Val Trp Asn

195	200	205
Val Arg Thr Ile Thr Ala	Val Met Arg Val Tyr Ala	Pro Gly Ile Ala
210	215	220
Gln Ile Phe Asp Arg Ile Tyr Pro Asp Phe Tyr Thr Glu Arg Glu Glu		
225	230	235
Glu Ser Val Lys Lys Leu Phe Pro Thr Ala Glu Ser Ile Ser Ile Asp		240
	245	250
Tyr Ala Val Met Glu Lys Ala Glu Glu Ile Tyr Val Leu Pro Ala Gln		255
	260	265
Met Gly Trp Ser Asp Leu Gly Thr Trp Gly Ala Leu His Thr Leu Leu		270
	275	280
Pro Lys Asp Lys Glu Gly Asn Ala Thr Val Gly Pro Asp Ile Arg Met		285
	290	295
Tyr Glu Ser Gln Asn Cys Met Val His Ala Ser Gln Glu Lys Arg Val		300
305	310	315
Val Ile Gln Gly Leu Asn Asp Tyr Ile Ile Ala Glu Lys Asp Asn Ile		320
	325	330
Leu Leu Ile Cys Gln Leu Ser Glu Glu Gln Arg Ile Lys Asp Phe Ser		335
	340	345
		350
Lys Glu		

<210> 6811

<211> 369

<212> PRT

<213> B.fragilis

<400> 6811

Tyr Asn Thr Thr Met Thr Asn Ile Leu Gly Leu Lys Gln Asn Arg Trp		
1	5	10
Ile Val Gly Ala Val Leu Leu Leu Thr Thr Cys Asn Leu Gln Ala Gln		15
	20	25
Glu Gln Pro Asn Ala Arg Glu Lys Phe Glu Arg Gly Asn Trp Phe Val		30
	35	40
Ser Gly Ala Leu Asn Gly Glu Trp Leu Thr Lys Thr Ile Gly Asn Val		45
	50	55
Tyr Ala Gly Gly Lys Ile Ser Gly Gly Val Tyr Leu Thr Pro Leu Ser		60
65	70	75
Gly Phe Arg Ala Thr Ala Glu Ile Gly Lys Asn Trp Ile Gly Asn Asp		80
	85	90
Thr Glu Ala Thr Gln Leu Ser Ala Asn Leu Asp Tyr Met Leu Thr Leu		95
	100	105
Ile Gly Asn Asn Gly Phe Lys Arg Phe Asn Leu Ala Ala Ile Leu Gly		110
	115	120
Ala Gly Phe Asn Tyr Tyr Asp Phe Gly Asp Asn Asp Pro Lys Tyr Thr		125
	130	135
Arg Val Asn Thr Ile Ser Gly Asn Phe Ser Ile Gln Ala Ser Tyr Asn		140
145	150	155
Val Asn Arg Lys Phe Ser Ile Phe Ile Glu Pro Gly Leu Lys Val Leu		160
	165	170
Pro Lys Tyr Tyr Ser Lys Glu Leu Asn Asn Lys Ile Tyr Met Gln Ser		175
	180	185
Asn Leu Thr Ile Gly Leu Ala Tyr Thr Phe Arg Asp Lys Tyr Arg Lys		190
	195	200
Ser Val Asp Asn Ser Ile His Pro Leu Tyr Leu Pro Glu Ala Asp Leu		205
	210	215
Leu Glu Ile Lys Glu Lys Ile Gly Met Leu Cys Glu Glu Val Met Gln		220
225	230	235
Met Lys Gln Glu Leu Lys Glu Arg Arg Lys Ile Thr Asp Gly Gln Asn		240

245 250 255
 Leu Met Ile Val Pro Gln Lys Asp Ala Leu Ser Ile Asp Ile Met Phe
 260 265 270
 Asp Glu Phe Ser Ser Phe Val Ser Glu Glu Gln Gly Gln Lys Ile Asp
 275 280 285
 Gly Ile Gly Glu Trp Met Lys Asn Asn Asn Ala Ser Ile Arg Ile Ile
 290 295 300
 Ala Phe Ser Asp Asn Leu Thr Asp Lys Lys Ala Asp Gln Glu Leu Arg
 305 310 315 320
 Lys Arg Arg Ser Glu Ala Ile Arg Lys Ile Leu Ile Glu Lys Tyr His
 325 330 335
 Ile Ser Pro Glu Arg Ile Ser Glu Ser Thr Pro Glu Ala Met Gly Tyr
 340 345 350
 Glu Asn Lys Thr Gly Cys Asn Ala Met Ile Val Tyr Ile Pro Glu Asn
 355 360 365
 Lys

<210> 6812

<211> 583

<212> PRT

<213> B.fragilis

<400> 6812

Arg Arg Glu Thr Thr Tyr Lys Leu Lys Glu Thr Thr Phe Lys Tyr Met
 1 5 10 15
 Lys Lys Ser Ile Leu Phe Thr Phe Val Leu Cys Leu Leu Ser Gln Trp
 20 25 30
 Ser Val Ala Gln Asp Pro Lys Trp Val Glu Lys Ala Lys Arg Ser Val
 35 40 45
 Phe Ser Ile Val Thr Tyr Asp Lys Asp Asp Lys Ile Gln Asn Thr Gly
 50 55 60
 Asn Gly Phe Phe Val Thr Glu Asp Gly Val Ala Leu Ser Asp Tyr Ser
 65 70 75 80
 Leu Phe Lys Gly Ala Gln Arg Ala Val Ile Ile Asn Ser Glu Gly Glu
 85 90 95
 Lys Met Pro Val Glu Cys Ile Leu Gly Ala Asn Asp Met Tyr Asp Ile
 100 105 110
 Ile Lys Phe Arg Val Gly Ile Thr Val Lys Lys Val Pro Ala Leu Gln
 115 120 125
 Val Ala Ala Leu Ala Pro Ala Val Gly Ala Glu Val Tyr Leu Leu Pro
 130 135 140
 Tyr Ser Thr Gln Lys Gly Gly Asn Val Thr Arg Gly Lys Val Lys Lys
 145 150 155 160
 Val Asp Asn Ile Gly Gly Asp Lys Tyr His Tyr Tyr Thr Leu Asp Met
 165 170 175
 Val Leu Lys Asp Lys Met Val Ser Cys Pro Val Thr Thr Ala Asp Gly
 180 185 190
 Lys Val Phe Gly Val Ala Gln Lys Ser Ser Gly Gln Asp Thr Ala Ser
 195 200 205
 Ile Ser Tyr Ala Ala Gly Ala Ala Phe Ala Met Ser Gln Asn Ile Ser
 210 215 220
 Ala Leu Ala Leu Ser Asp Pro Ala Leu Asn Ala Ile Gly Ile Lys Lys
 225 230 235 240
 Gly Leu Pro Glu Asp Glu Asp Gln Ala Leu Val Tyr Leu Phe Ile Ala
 245 250 255
 Ser Thr Gln Ser Thr Pro Glu Ala Tyr Ala Ile Ala Leu Asp Asp Phe
 260 265 270
 Ile Lys Thr Phe Pro Asn Ser Ala Asp Gly Tyr Leu Arg Arg Ala Gly

275 280 285
 Asn Tyr Val Phe Ala Asp Lys Asp Glu Asn His Met Asp Lys Ala Ala
 290 295 300
 Ala Asp Leu Glu His Ala Leu Lys Val Ala Gln Lys Lys Asp Asp Thr
 305 310 315 320
 Tyr Tyr Asn Ile Ala Lys Leu Ile Tyr Asn Tyr Gln Leu Ser Lys Pro
 325 330 335
 Glu Thr Val Tyr Lys Asp Trp Thr Tyr Asp Lys Ala Leu Glu Asn Val
 340 345 350
 Arg Ser Ala Ile Ala Ile Gln Ser Leu Pro Val Tyr Gln Gln Leu Glu
 355 360 365
 Gly Asp Ile Leu Phe Ala Lys Gln Asp Tyr Ala Gly Ala Phe Ala Ser
 370 375 380
 Tyr Asp Lys Val Asn Gln Thr Glu Leu Ala Ser Pro Ala Ser Phe Phe
 385 390 395 400
 Ser Ala Ala Lys Ala Lys Glu Leu Ser Lys Ala Ala Pro Glu Glu Val
 405 410 415
 Ile Ala Leu Leu Asp Ser Cys Ile Ala Arg Cys Gln Thr Pro Ile Thr
 420 425 430
 Ser Asp Leu Ala Pro Tyr Leu Leu Glu Arg Ala Gln Met Tyr Met Asn
 435 440 445
 Val Glu Lys Tyr Arg Leu Ala Leu Ala Asp Tyr Asp Ala Tyr Phe Asn
 450 455 460
 Ala Val Lys Gly Ser Val Asn Asp Leu Phe Tyr Tyr Tyr Arg Glu Gln
 465 470 475 480
 Ala Ala Phe Lys Ala Lys Gln Phe Gln Arg Ala Leu Asp Asp Ile Ala
 485 490 495
 Lys Ala Ile Glu Leu Asn Pro Glu Asp Leu Thr Tyr Arg Ala Glu Gln
 500 505 510
 Ala Val Val Asn Leu Arg Val Gly Arg Tyr Glu Glu Ala Glu Lys Val
 515 520 525
 Leu Lys Asp Ala Leu Ala Ile Asp Pro Lys Tyr Ala Glu Gly Tyr Arg
 530 535 540
 Leu Leu Gly Ile Cys Gln Ile Gln Leu Lys Gln Glu Lys Ala Ala Cys
 545 550 555 560
 Ala Ser Phe Ala Lys Ala Lys Glu Leu Gly Asp Pro Asn Val Asp Glu
 565 570 575
 Leu Ile Lys Lys His Cys Lys
 580

<210> 6813
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 6813
 Asn Lys Arg Thr Met Glu Lys Tyr Glu Ile His Phe Val Gly Ser Val
 1 5 10 15
 Leu Asp Ser Asn Thr Ser Gly Asp Glu Gln Ala Lys Ile Val Ala Leu
 20 25 30
 Ile Glu Gln Gly His Ser Val Ala Leu Asp Leu Ser Gly Cys Ser Tyr
 35 40 45
 Val Ser Ser Ala Gly Leu Arg Val Met Leu Tyr Ala Phe Lys Leu Ala
 50 55 60
 Lys Ala Lys Ser Arg Asp Val Cys Leu Val Gly Val Ser Gln Glu Val
 65 70 75 80
 Lys Asp Val Met His Met Thr Gly Phe Asp Lys Phe Phe Arg Phe Tyr
 85 90 95
 Gln Thr Leu Asp Glu Leu Ser Gln Pro

100

105

<210> 6814
 <211> 647
 <212> PRT
 <213> B.fragilis

<400> 6814

Cys	Ile	Phe	Ala	Pro	Pro	Lys	Thr	Lys	Thr	Val	Lys	Gln	Met	Lys	Gln
1				5					10					15	
Asn	Phe	Phe	His	Arg	Tyr	Leu	Ser	Ala	Lys	Val	Leu	Pro	Ile	Trp	Thr
			20					25					30		
Ile	Leu	Leu	Ile	Asp	Ile	Phe	Ile	Ile	Val	Ala	Ser	Cys	Leu	Leu	Ala
		35					40					45			
Tyr	Ser	Leu	Arg	Tyr	Asp	Phe	Arg	Ser	Ile	Phe	Leu	Asp	Ser	Ser	Thr
	50					55					60				
Ile	Asp	Lys	Thr	Ile	Leu	Trp	Thr	Val	Val	Ala	Asn	Leu	Ile	Phe	Phe
65					70					75					80
Arg	Val	Phe	Arg	Thr	Tyr	Ser	Asn	Val	Leu	Arg	Phe	Ser	Ser	Phe	Val
				85					90					95	
Asp	Ile	Met	Arg	Ile	Phe	Val	Ser	Leu	Thr	Val	Ser	Tyr	Gly	Val	Leu
			100					105					110		
Met	Ile	Leu	Ser	Leu	Leu	Leu	Asp	Ala	Tyr	Leu	Gly	Ile	Arg	Ile	Gly
		115					120					125			
Ala	Ile	Ser	Val	Leu	Phe	Met	Ala	Tyr	Val	Ile	Asn	Phe	Ala	Met	Met
	130					135					140				
Ala	Cys	Ser	Arg	Ile	Val	Val	Lys	Met	Phe	Phe	Glu	Val	Leu	Asn	Phe
145					150					155					160
Asp	Gly	Ser	His	Thr	Thr	Asn	Val	Phe	Ile	Tyr	Gly	Ala	Lys	Glu	Ala
				165					170					175	
Gly	Val	Asn	Ile	Ala	Lys	Ser	Leu	Arg	Val	Asn	Leu	Arg	Asn	His	Tyr
		180						185					190		
Arg	Leu	Arg	Gly	Phe	Ile	Ala	Asp	Glu	Pro	Glu	Leu	Ile	Gly	Lys	Val
		195					200					205			
Met	Met	Gly	Ala	Lys	Val	Phe	Pro	Asn	Asp	Glu	Ala	Leu	Ile	Glu	Asn
	210					215					220				
Met	Asn	Asp	Arg	Asp	Val	His	Thr	Ile	Ile	Val	Ser	Pro	Ala	Lys	Met
225					230					235					240
Glu	Lys	Leu	Lys	Lys	Ser	Asp	Met	Ile	Asp	Thr	Leu	Leu	Ser	Asn	Asn
				245					250					255	
Val	Lys	Leu	Leu	Thr	Ala	Pro	Pro	Leu	Ser	Glu	Trp	Gly	Gly	Gln	Ala
		260						265					270		
Leu	Asn	Lys	Thr	Gln	Leu	Lys	Glu	Ile	Gln	Ile	Glu	Asp	Leu	Leu	Gln
		275					280					285			
Arg	Glu	Pro	Ile	Glu	Val	Asp	Ile	His	Lys	Ile	Ala	Ser	His	Leu	Glu
	290					295					300				
Gly	Lys	Arg	Val	Met	Ile	Thr	Gly	Ala	Ala	Gly	Ser	Ile	Gly	Ser	Glu
305					310					315					320
Ile	Met	Arg	Gln	Val	Ala	Ser	Phe	Asn	Pro	Tyr	Lys	Leu	Ile	Leu	Ile
			325						330					335	
Asp	Gln	Ala	Glu	Thr	Pro	Leu	His	Asp	Ile	Arg	Leu	Glu	Leu	Gln	Asp
		340						345					350		
Arg	Trp	Arg	Asp	Ile	Asp	Ala	Glu	Thr	Ile	Val	Ala	Asp	Ile	Ser	Asn
		355					360					365			
Ala	Thr	Arg	Met	Glu	Ala	Ile	Phe	Arg	Glu	Tyr	Lys	Pro	Gln	Tyr	Ile
	370					375					380				
Phe	His	Ala	Ala	Ala	Tyr	Lys	His	Val	Pro	Met	Met	Glu	Asp	Asn	Val
385					390					395					400
Ser	Glu	Ser	Ile	Gln	Ile	Asn	Val	Ser	Gly	Thr	Arg	Thr	Leu	Ala	Asp

405 410 415
 Leu Ala Val Lys Phe Gly Ser Glu Lys Phe Val Met Ile Ser Thr Asp
 420 425 430
 Lys Ala Val Asn Pro Thr Asn Val Met Gly Cys Ser Lys Arg Ile Cys
 435 440 445
 Glu Ile Tyr Val Gln Ser Leu Ala Lys Lys Leu Gln Lys Glu Gly Thr
 450 455 460
 Arg Ser Val Gln Phe Ile Thr Thr Arg Phe Gly Asn Val Leu Gly Ser
 465 470 475 480
 Asn Gly Ser Val Ile Pro Arg Phe Arg Asp Gln Ile Gln Arg Gly Gly
 485 490 495
 Pro Val Thr Val Thr His Pro Glu Ile Ile Arg Tyr Phe Met Thr Ile
 500 505 510
 Pro Glu Ala Cys Arg Leu Val Leu Glu Ala Gly Ser Met Gly Asn Gly
 515 520 525
 Gly Glu Ile Tyr Ile Phe Asp Met Gly Lys Pro Val Lys Ile Val Asp
 530 535 540
 Leu Ala Lys Arg Met Ile Ser Leu Ser Gly Arg Thr Asp Val Lys Ile
 545 550 555 560
 Glu Phe Thr Gly Leu Arg His Gly Glu Lys Leu Tyr Glu Glu Leu Leu
 565 570 575
 Asn Val Lys Glu Leu Thr Lys Pro Thr Tyr His Glu Lys Ile Met Ile
 580 585 590
 Ala Thr Val Arg Glu Tyr Asp Tyr Asp Glu Val Lys Glu Arg Ile Gln
 595 600 605
 Lys Leu Ile Asp Val Ser Tyr Thr Tyr Asp Gln Met Lys Ile Val Ala
 610 615 620
 Ala Met Lys Asp Ile Val Pro Glu Phe Val Ser Lys Asn Ser Cys Phe
 625 630 635 640
 Glu Ala Leu Asp Lys Lys Asp
 645

<210> 6815
 <211> 383
 <212> PRT
 <213> B.fragilis

<400> 6815
 Thr Leu His Ala Thr Ser Thr Ser Phe Phe Tyr Tyr Thr Asn Gln Ser
 1 5 10 15
 Val Thr Leu Val Phe Leu Gln Asp Ala Phe Asp Thr Leu Leu Gly Lys
 20 25 30
 Lys Gln Thr Leu His Asp Gly Pro Cys Ala Leu Asn Ile Pro Phe Asn
 35 40 45
 Leu Lys Ala Leu Ile Phe Met Ser Ser Pro Lys Ile Ser Ile Ile Ile
 50 55 60
 Pro Val Tyr Met Ala Glu Ser Tyr Leu His Arg Cys Val Asp Ser Ile
 65 70 75 80
 Ile Thr Gln Thr Phe Thr Asp Trp Glu Leu Leu Val Asp Asp Gly
 85 90 95
 Ser Pro Asp His Ser Gly Glu Leu Cys Glu Lys Tyr Ala Ser Ala Tyr
 100 105 110
 Lys Ser Arg Ile Lys Ala Phe His Lys Pro Asn Gly Gly Val Ala Ser
 115 120 125
 Ala Arg Glu Phe Gly Met Gln Gln Ala Arg Gly Glu Tyr Ser Ile His
 130 135 140
 Val Asp Pro Asp Asp Trp Ile Asp Ser Asn Thr Leu Glu Glu Leu Tyr
 145 150 155 160
 Gln Gln Ala Val Lys Glu Gln Ala Asp Met Val Ile Cys Asp Phe Met

165 170 175
 Met Glu Tyr Pro Asn Arg Gln Ile His Asn Cys Gln Lys Pro Gln Leu
 180 185 190
 Leu Asp Ser Ser Ser Phe Met His Gln Leu Leu Gln Gln Glu Arg His
 195 200 205
 Gly Ser Leu Cys Asn Lys Leu Ile Arg Thr Glu Leu Tyr His Lys Tyr
 210 215 220
 Gln Leu His Phe Pro Glu Lys Met Ile Cys Trp Glu Asp Leu Tyr Ile
 225 230 235 240
 Cys Cys Ser Ile Leu Leu His Gly Cys Lys Leu Ala Tyr Val Pro His
 245 250 255
 Ala Leu Tyr His Tyr Asp Phe Tyr Thr Asn Asp Asn Ser Met Val Arg
 260 265 270
 His Thr Asp Met Arg Gly Leu Gln Ala Gln Ile Asp Phe Cys Arg Leu
 275 280 285
 Met Gln Ala Lys Ile Ser Pro Glu Tyr Leu Pro Glu Leu Asn Glu Leu
 290 295 300
 Lys Gly Ile Thr Leu Ile Thr Ala Phe Arg Asn Gln Leu Leu Asn Glu
 305 310 315 320
 Gln Ala Ile Arg Ser Leu Phe Pro Glu Ile Asn Asp Trp Tyr Val Thr
 325 330 335
 Arg Tyr Gly His Asp Tyr Glu Lys Ser Asn Tyr Tyr Gly Leu Thr Leu
 340 345 350
 Val Leu Arg Gly Tyr Asn Phe Lys Thr Ala Arg Arg Arg Met Phe Val
 355 360 365
 Ala Lys Phe Leu Val Gln Ile Lys Asn Lys Ile Thr Arg Met Leu
 370 375 380

<210> 6816

<211> 549

<212> PRT

<213> B.fragilis

<400> 6816

Thr Thr Asn Ala Met Lys Leu Arg Thr Ile Val Lys Ile Ala Val Ile
 1 5 10 15
 Ser Ser Val Val Leu Leu Cys Thr Gly Phe Ala Met Phe Ser Phe Phe
 20 25 30
 Arg Leu Ser Ala Ala Glu Gly Arg Lys Asp Phe Asn Leu Tyr Thr Leu
 35 40 45
 Val Pro Gly Ser Ala Thr Val Val Leu Glu Thr Asp Asp Leu Ala Gly
 50 55 60
 Met Ile Gln Gly Ile Asn Glu Leu Ser Cys Ser Lys Asp Arg His Phe
 65 70 75 80
 Leu Tyr Val Ser Lys Leu Phe Ser Tyr Leu Lys Leu His Leu Tyr Thr
 85 90 95
 Leu Leu Glu Asp Thr Pro His Gly Leu Ser Lys Gln Met Asn Lys Val
 100 105 110
 Leu Leu Ser Phe His Glu Pro Asp Asn Asp Arg Asn Gln Val Leu Tyr
 115 120 125
 Cys Ser Leu Gly Asn Gly Asp Tyr Glu Leu Val Glu Lys Phe Ile Arg
 130 135 140
 Lys Tyr Cys Ser Ser Ser Phe Pro Ser Lys Leu Phe Asp Tyr Lys Gly
 145 150 155 160
 Glu Glu Ile Arg Ile Tyr Pro Met Pro Asp Asp Ser Phe Leu Ala Cys
 165 170 175
 Tyr Phe Thr Ser Asp Phe Leu Val Val Ser Tyr Gln Lys Lys Leu Ile
 180 185 190
 Glu Gln Val Ile Asp Ala Arg Leu Ser Lys Lys Ser Leu Leu Thr Asp

195 200 205
 Ala Ser Phe Ala Lys Val His Glu Asp Lys Arg Ala Arg Val Ala Ala
 210 215 220
 Thr Ile Tyr Ala Arg Met Gln Pro Leu Ser Met Gly Lys Ala Thr Asp
 225 230 235 240
 Gly Ile Arg Ser Cys Thr Gln Leu Gly Gly Trp Thr Glu Phe Asp Met
 245 250 255
 Lys Met Asn Gly Asp Ala Ile Tyr Phe Ser Gly Val Ser His Asp Thr
 260 265 270
 Asp Thr Cys Leu Thr Phe Met Asn Val Leu Arg Gln Gln Gln Pro Val
 275 280 285
 Glu Asp Phe Pro Gly Asp Ile Leu Pro Ala Ser Thr Phe Phe Phe Asn
 290 295 300
 Lys Arg Ser Val Thr Asp Met Gln Ala Met Leu Asp Phe Thr Ala Arg
 305 310 315 320
 Gln Glu Tyr Thr Thr Ser Thr Tyr Ser Asp Tyr Ile Arg Asp Arg Asp
 325 330 335
 Gly Glu Leu Leu Ala Tyr Leu Lys Glu Asn Ala Gly Gly Glu Ile Val
 340 345 350
 Thr Cys Leu Phe His Ser Thr Asp Thr Leu Ser Asn Pro Cys Ala Val
 355 360 365
 Met Ser Ile Pro Leu Arg Asp Gly Gln Gln Ala Glu Arg Val Leu Gln
 370 375 380
 Gly Met Leu Arg Thr Ala Pro Lys Glu Val Asp Gly Pro Pro Lys Pro
 385 390 395 400
 Arg Thr Thr Phe Cys Lys Thr Pro Leu Arg Ala Tyr Thr Leu Tyr Val
 405 410 415
 Leu Pro Arg Asn Thr Leu Phe Thr Gln Leu Thr Gly Ile Thr Glu Ser
 420 425 430
 Ala Leu Tyr Ile Tyr Ala Cys Phe Tyr Glu Gly Arg Leu Val Leu Ala
 435 440 445
 Pro Asp Val Glu Ser Leu Thr Ala Tyr Leu Arg His Leu Asp Lys Lys
 450 455 460
 Glu Ile Leu Asp Asp Thr Pro Gly Tyr Glu Glu Ala Val Val Asn Leu
 465 470 475 480
 Ser Pro Ser Tyr Asn Phe Met Met Val Ala Asp Leu Gly Glu Thr Phe
 485 490 495
 Ser Gln Pro Glu Asn Tyr Val Arg Leu Ile Pro Ala Phe Phe Phe Arg
 500 505 510
 Asn Gln Glu Phe Phe Arg His Phe Ile Leu Ser Ala Gln Phe Thr Cys
 515 520 525
 Thr Asp Gly Ile Val Tyr Pro Asn Val Val Leu Ile Tyr Lys Gly Glu
 530 535 540
 Ser Asp Asp Ile Ser
 545

<210> 6817
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 6817
 Ile Phe His Phe Lys Val Glu Ile Gly Asp Leu Asp Glu Ile Val Phe
 1 5 10 15
 Lys Glu Ile Phe Gly Leu Asp Leu Glu Ser Gln Val Val Glu Tyr Gly
 20 25 30
 His Lys Lys Cys Ser Ser Asp His Ala Trp Pro Glu Glu His Thr Gln
 35 40 45
 Thr Lys Gln Ile Lys Ala Val Thr Ile Arg Ile Gly Thr Pro Leu His

50
Pro Val Leu
65

55

60

<210> 6818
<211> 490
<212> PRT
<213> B.fragilis

<220>
<221> UNSURE
<222> (49)
<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6818

Lys	Lys	His	Tyr	Arg	Leu	Val	Ile	Ser	Met	Phe	Leu	Ser	Gly	Gly	Arg
1				5				10					15		
Thr	Leu	Ser	Trp	Arg	Val	Arg	Gly	Gln	Lys	Ser	Lys	Gly	His	Ser	Met
		20					25					30			
Leu	Ser	Glu	Gly	Glu	Ser	Glu	Glu	Asp	Met	Glu	Asp	Val	Leu	Phe	
	35				40					45					
Xaa	Asn	Pro	Glu	Gln	Phe	Arg	Arg	Val	Ala	Pro	Tyr	Phe	Pro	Glu	Glu
	50				55					60					
Val	Phe	Glu	His	Leu	Pro	Asp	Leu	Leu	Ala	Gln	Gly	Val	Lys	Ala	Ala
65				70				75						80	
Gly	Asn	Tyr	Arg	Glu	Arg	Asp	Met	Leu	Leu	Met	Ala	Met	Ile	Thr	Asn
			85					90					95		
Ile	Ser	Ala	Cys	Leu	Pro	Glu	Val	Arg	Val	Leu	Tyr	Asp	Gln	Val	Tyr
		100					105					110			
Tyr	Ser	Pro	His	Leu	Tyr	Tyr	Met	Val	Ile	Ala	His	Ala	Gly	Gly	Gly
	115					120					125				
Lys	Gly	Val	Val	Ser	Leu	Ala	Gly	Leu	Leu	Pro	Gly	Glu	Ile	His	Arg
	130				135					140					
Tyr	Tyr	Glu	Lys	Gln	Asn	Glu	Glu	Met	Arg	Leu	Val	Tyr	Asp	Lys	Ala
145				150				155						160	
Phe	Phe	Glu	Trp	Glu	Leu	Glu	Leu	Lys	Lys	Ala	Gln	Ala	Glu	Lys	Arg
		165						170					175		
Ser	Pro	Asp	Phe	Ser	Leu	Arg	Pro	Lys	Glu	Pro	Val	Arg	Lys	Leu	Leu
		180					185						190		
Thr	Leu	Ser	Pro	Asn	Val	Ser	Lys	Ser	Met	Leu	Ile	Ser	Ala	Leu	Glu
	195						200					205			
Glu	Ser	Gly	Lys	Leu	Gly	Cys	Cys	Ile	Asn	Ala	Thr	Glu	Leu	Asp	Met
	210				215						220				
Val	Ser	Gly	Ala	Ile	Arg	Asn	Asp	Tyr	Gly	Lys	His	Asp	Asp	Val	Phe
225				230						235				240	
Arg	Ala	Ala	Phe	Gln	His	Glu	Val	Val	Ser	Ala	Asp	Phe	Lys	Val	Asn
			245						250				255		
Gly	Arg	Gln	Val	Val	Ala	His	Asn	Pro	His	Leu	Ala	Leu	Cys	Leu	Ala
		260					265					270			
Gly	Thr	Pro	Asn	Gln	Leu	Val	Arg	Phe	Ile	Pro	Ser	Leu	Glu	Asn	Gly
	275						280					285			
Leu	Tyr	Ser	Arg	Phe	Leu	Val	Tyr	Thr	Gly	Gln	Ser	Asp	Trp	Cys	Trp
	290				295						300				
Arg	Ser	Ala	Ala	Pro	Arg	Glu	Gly	Gly	Glu	Asp	His	Arg	Ala	Met	Phe
305				310					315					320	
Ala	Arg	Leu	Ser	Gly	Arg	Leu	Leu	Glu	Leu	His	Gln	Phe	Leu	Leu	Gln
			325					330					335		
Ser	Pro	Thr	Glu	Val	Thr	Phe	Thr	Ala	Ala	Gln	Trp	Glu	Glu	His	Thr
			340					345					350		

Ser Arg Phe Ser Ser His Leu Ser Glu Val Val Asn Glu Arg Asp Asp
 355 360 365
 Ser Pro Gly Ala Ile Val Leu Arg His Gly Leu Met Ala Ser Arg Ile
 370 375 380
 Ala Gly Val Leu Thr Ala Leu Arg Lys Gly Glu Cys Ala Trp Ala Met
 385 390 395 400
 Pro Gln Tyr Val Cys Ser Asp Glu Asp Phe His Thr Ala Met Leu Met
 405 410 415
 Thr Asp Val Leu Leu Glu His Ser Leu Leu Ser Thr Ser Val Arg
 420 425 430
 Lys Ser Glu Ser Lys Ser Gly Pro Leu Lys Pro Tyr Phe Arg Leu Arg
 435 440 445
 Pro Val Leu Gln Thr Phe Ser Gly Thr Phe Thr Leu Tyr Asp Ala Met
 450 455 460
 Asp Arg Ala Val Glu Met Gly Ile Ser Val Pro Thr Phe Asn Cys Leu
 465 470 475 480
 Phe Met Arg Thr Ile Glu Leu Lys Asn Asn
 485 490

<210> 6819

<211> 459

<212> PRT

<213> B.fragilis

<400> 6819

Asn Met Asn Tyr Gln Glu Thr Leu Asp Tyr Leu Tyr Asn Ser Val Pro
 1 5 10 15
 Met Phe Gln Gln Val Gly Ser Ser Ala Tyr Lys Glu Gly Leu Glu Asn
 20 25 30
 Thr Tyr Ala Leu Asp Glu Tyr Leu Gly His Pro His Thr Ala Phe Gln
 35 40 45
 Ser Ile His Ile Ala Gly Thr Asn Gly Lys Gly Ser Cys Ser His Thr
 50 55 60
 Leu Ala Ala Ile Leu Gln Ser Ala Gly Tyr Arg Val Gly Leu Tyr Thr
 65 70 75 80
 Ser Pro His Leu Val Asp Phe Arg Glu Arg Ile Arg Ile Asn Gly Glu
 85 90 95
 Pro Ile Pro Gln Glu Tyr Val Ile Arg Phe Val Glu Asp His Arg Leu
 100 105 110
 Phe Phe Glu Pro Leu His Pro Ser Phe Phe Glu Leu Thr Thr Ala Met
 115 120 125
 Ala Phe Arg Tyr Phe Ala Asp Gln His Ile Asp Val Ala Val Ile Glu
 130 135 140
 Val Gly Leu Gly Gly Arg Leu Asp Cys Thr Asn Ile Ile Arg Pro Asp
 145 150 155 160
 Leu Ser Ile Ile Thr Asn Ile Ser Phe Asp His Met Gln Phe Leu Gly
 165 170 175
 Asn Thr Leu Ala Gln Ile Ala Thr Glu Lys Ala Gly Ile Ile Lys Arg
 180 185 190
 Gly Ile Pro Val Val Val Gly Glu Thr Thr Glu Glu Thr Lys Pro Val
 195 200 205
 Phe Tyr Arg Lys Ala Gln Glu Met Glu Ala Pro Val Thr Phe Ala Glu
 210 215 220
 Glu Glu Gln Arg Leu Lys Gly Ala Thr Lys Phe Lys Thr Arg Ala Asp
 225 230 235 240
 Arg Lys Pro Gly Gln Tyr Thr Asp His Gln Pro Asn Thr Ala Ala Glu
 245 250 255
 Lys Asp Thr Glu Tyr Ile Thr Gly Trp Ile Tyr Glu Asn Asp Val Tyr
 260 265 270

Pro Gly Leu Glu Gly Val Leu Gly Gly Ser Tyr Gln Leu Lys Asn Thr
 275 280 285
 Asn Thr Leu Leu Ser Ala Leu Pro Val Leu Lys Ser Leu Gly Tyr Lys
 290 295 300
 Ile Glu Asp His Asp Val Arg Asn Gly Phe Leu Gln Val Asp Lys Met
 305 310 315 320
 Thr Gly Leu Gln Gly Arg Trp Gln Lys Leu Ser Asp Ser Pro Thr Val
 325 330 335
 Ile Cys Asp Thr Gly His Asn Val Ala Gly Ile Ser Tyr Ile Val Glu
 340 345 350
 Gln Leu Lys Gln Met Lys Tyr Asn Cys Leu His Met Val Ile Gly Met
 355 360 365
 Val Asn Asp Lys Asp Val Ser Gly Ile Leu Ser Ile Leu Pro Glu Asn
 370 375 380
 Ala Val Tyr Tyr Phe Thr Lys Ala Ser Val Lys Arg Ala Leu Pro Glu
 385 390 395 400
 Ala Gln Leu Gln Gln Ile Gly Ala Ser Ala Gly Leu Gln Gly Lys Ala
 405 410 415
 Tyr Pro Asp Val Gln Ser Ala Val Lys Ala Ala Gln Glu Lys Ser Leu
 420 425 430
 Pro Glu Asp Leu Ile Phe Val Gly Ser Ser Phe Ile Val Ala Asp
 435 440 445
 Leu Leu Ser Cys Arg Asp Ala Leu Asp Leu Asp
 450 455

<210> 6820
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 6820
 Asn Thr Ser Leu Arg Asn Lys Met Ile Ile Ala Ser Gly Glu Gln Ala
 1 5 10 15
 Ser Gln Phe Val His His Ser Phe Leu Ile His Ser Ser Leu Leu Ile
 20 25 30
 Gln Ile Leu Leu Arg Trp Phe Lys Gly Tyr Asn Cys Pro Thr Lys Ile
 35 40 45
 Ser Gly Lys Pro Leu Leu Ile Phe Tyr His Ile Asp Ser Ala His Lys
 50 55 60
 Gln Asp His Tyr Asn Val Trp Gln Thr Leu Pro Ser Leu Trp Leu Ala
 65 70 75 80
 Lys Arg Lys Ala Phe Arg Ile Val
 85

<210> 6821
 <211> 354
 <212> PRT
 <213> B.fragilis

<400> 6821
 Thr Lys Tyr Gln Asn Ala Ile Asn Asn Met Ser Leu Val Asn Asn Phe
 1 5 10 15
 Thr Val Lys Lys Val Arg Ser Ser Asn Leu Glu Ser Leu Arg Leu Leu
 20 25 30
 Ser Met Phe Phe Val Leu Val Val His Ala Asp Phe Gln Ala Leu Gly
 35 40 45
 Met Pro Asp Arg Thr Glu Met Thr Ile Leu Pro Leu Phe Ser Val Phe
 50 55 60
 Arg Ile Ile Ile Glu Ala Phe Ala Ile Val Cys Val Asn Ser Phe Val

65	70	75	80
Leu Leu Ser Gly Trp Phe Gly Ile Asn Phe His Ile Lys Ser Leu Cys			
	85	90	95
Asn Leu Leu Phe Gln Cys Ala Phe Phe Leu Ile Gly Ile Tyr Thr Phe			
	100	105	110
Thr Ile Leu Ile Gly Ile Glu Pro Leu Ser Ile Ser Gly Ile Lys Arg			
	115	120	125
Cys Leu Met Leu Thr Asn Asn Val Trp Phe Val Lys Cys Tyr Leu Gly			
	130	135	140
Met Phe Ile Met Ala Pro Ile Leu Asn Ala Phe Val Glu Lys Thr Asp			
145	150	155	160
Lys Arg Thr Phe Ser Thr Val Leu Leu Ser Phe Phe Ile Phe Gln Thr			
	165	170	175
Ile Tyr Gly Trp Phe Ser Asn Gly Ala Pro Tyr Phe Glu Lys Gly Tyr			
	180	185	190
Ser Ala Phe Ser Phe Met Gly Leu Tyr Leu Leu Ala Arg Tyr Val Arg			
	195	200	205
Ile Tyr Gln Pro Ser Tyr Thr Gln Trp Ser Lys Ser Lys Asn Leu Leu			
	210	215	220
Met Tyr Ile Ser Leu Ser Thr Phe Thr Ala Leu Met Leu Ile Ile Thr			
225	230	235	240
Cys Tyr Phe Asp Lys Val Gly Tyr Phe Cys Met Phe Trp Thr Tyr Thr			
	245	250	255
Ser Pro Leu Val Ile Ala Gly Ala Leu Tyr Leu Leu Leu Phe Phe Asn			
	260	265	270
Arg Phe Ala Phe Gln Asn Lys Gly Ile Asn Trp Ile Ala Ala Ser Cys			
	275	280	285
Phe Ala Val Tyr Leu Phe His Phe Phe Ile Trp Glu Tyr Phe Met Lys			
	290	295	300
Pro His Ile Gln Gln Leu Ala Val Thr Tyr Asn Gly Ile Ser Cys Leu			
305	310	315	320
Leu Val Ile Thr Gly Leu Leu Leu Thr Phe Phe Thr Ala Ala Ile Leu			
	325	330	335
Ile Asp Lys Ile Arg Leu Tyr Ile Trp Asn His Phe Val Ser Lys Tyr			
	340	345	350
Ile Ser			

<210> 6822

<211> 421

<212> PRT

<213> B.fragilis

<400> 6822

Met Cys Leu Asn Pro Leu Ser Cys Met Lys Lys Gln Leu Thr Ile Ile			
1	5	10	15
Ile Gly Leu Leu Leu Ser Ser Ser Ile Thr Val His Ala Gln Val Ala			
	20	25	30
Gln Lys Leu Arg Glu Leu Gly Met Glu Asn Ile Arg Thr Ile Glu Thr			
	35	40	45
Gly Gly Thr Thr Val Ala Ala Phe Glu Asp Asn Val Tyr Arg Gly Thr			
	50	55	60
Tyr Arg Gly Val Gly Lys Ala Ile Ile Ala Gly Met Glu Gly Met Gly			
65	70	75	80
Asn Gly Asn Leu Glu Leu Val Ala Leu Asp Gly Asn Gly Ile Pro Gln			
	85	90	95
Leu Ser Ile Ser Leu Pro Asp Thr Leu Ile Ala Gly Tyr Lys Ser Gly			
	100	105	110
Gly Ile Ser Leu Lys Glu Val Tyr Glu Arg Met Glu Met Ser Tyr Asp			

115	120	125
Thr Asp Arg Pro Met Gly	Leu Leu Lys Gly Ser	Ala Gly Val Ile Asn
130	135	140
Arg Ser Ala Trp Lys Ala Asp	Ile Val Leu Tyr Pro	Glu Val Ser Leu
145	150	155
Glu Asn Ser Thr Phe Asp Lys	Leu Tyr Ser Tyr Arg	Val Asn Leu Ser
165	170	175
Pro Ala Val Glu Met Asp Leu	Trp Lys Gly Ala Lys	Ala Thr Ala Gln
180	185	190
Val Val Phe Pro Ile Ala Thr	Asn Met Lys Gly Glu	Tyr Lys Lys Ile
195	200	205
Arg Pro Gly Val Met Thr Ile	Ser Gln Glu Ile Arg	Phe Arg Asn Asn
210	215	220
Phe Leu Ala Arg Ile Val Ala	Gly Asn Phe Thr Asp	His Arg Ile Gly
225	230	235
Ala Gln Ala Glu Val Lys Tyr	Arg Thr Gly Asn Gly	Arg Val Glu Leu
245	250	255
Gly Ala Gln Ile Gly Thr Thr	Gly Tyr Ser Ala Ile	Thr Asp Asp Gly
260	265	270
Trp Tyr Ile Gly Thr Arg Gln	Arg Ile Asn Ala Ala	Val Lys Gly Ser
275	280	285
Leu Tyr Val Pro Gln Phe Asn	Thr Gln Leu Asp Leu	Gln Ala Gly Arg
290	295	300
Tyr Leu Tyr Gly Asp Tyr Gly	Leu Arg Gly Asp Cys	Thr Arg His Phe
305	310	315
Gly Glu Tyr Ala Val Gly Val	Tyr Ala Met Tyr Val	Glu Gly Glu Val
325	330	335
Asn Gly Gly Phe His Phe Ala	Ile Pro Leu Pro Gly	Lys Lys Trp Asn
340	345	350
Arg Asn His Ala Val Arg Met	Lys Pro Ala Glu Phe	Phe Ala Ala Glu
355	360	365
Tyr Ser Met Val Ser Trp Gly	Glu Tyr Ala Asp Arg	Lys Met Gly Tyr
370	375	380
Thr Tyr Gln Thr Arg Pro Ala	Glu Asn Arg Ser Asn	Gly Phe Phe Gln
385	390	395
Pro Glu Tyr Ile Arg His Phe	Leu Ile Lys Ser Ile	Glu Lys Glu Arg
405	410	415
Asn Lys Lys Gln Phe		
420		

<210> 6823

<211> 250

<212> PRT

<213> B.fragilis

<400> 6823

Arg Thr Tyr Asn Tyr Pro Phe His Leu Arg Asn Met Leu Lys Leu Lys	
1 5 10 15	
Thr Val Ser Leu Leu Lys His Arg Ser Asp Leu Ser Ile Leu Pro Glu	
20 25 30	
Gly Lys Leu Leu Ile Asn Thr Ile Asn Ala His Ser Tyr Asn Thr Ala	
35 40 45	
Leu Lys Asp Ala Gly Phe Ala Glu Ala Leu Leu Lys Gly Gly Ala Leu	
50 55 60	
Ile Pro Asp Gly Ala Ser Met Val Leu Ala Phe Arg Trp Leu Arg Lys	
65 70 75 80	
Glu Ser Ile Glu Arg Thr Ala Gly Trp Asp Leu Phe Glu Tyr Glu Met	
85 90 95	
Glu Arg Leu Asn Arg Lys Gly Gly Ile Cys Tyr Phe Leu Gly Ser Ser	

[illegible]

<400> 6824

Ile	Lys	Asn	Asn	Trp	Asn	Met	Lys	Thr	Ile	Lys	Leu	Gly	Tyr	Glu	Gly
1				5					10					15	
Glu	Glu	Ala	Leu	Leu	Leu	Cys	Arg	Glu	Leu	Lys	Arg	Asn	Gly	Tyr	Ser
			20					25					30		
Val	Lys	Glu	Ser	Arg	Thr	Phe	Thr	Gln	Glu	Met	Lys	Glu	Ala	Val	Ile
			35					40					45		
Asp	Phe	Gln	Gln	Lys	Asn	Lys	Leu	Asp	Ala	Asp	Gly	Ile	Val	Gly	Tyr
						55					60				
Arg	Thr	Trp	Glu	Val	Leu	Phe	Phe	Thr	Gly	His	Pro	Ile	Thr	Glu	Arg
65					70					75				80	
Leu	Thr	Glu	Glu	Asp	Phe	Ile	Leu	Val	Ala	Arg	Leu	Leu	Asp	Val	Glu
				85					90					95	
Val	Ala	Ala	Leu	Lys	Ala	Val	Gln	Gln	Val	Glu	Thr	Gly	Gly	Arg	Gly
			100					105					110		
Gly	Phe	Phe	Ala	Pro	Gly	Lys	Pro	Ala	Ile	Leu	Phe	Glu	Gly	His	Ile
			115				120					125			
Phe	Trp	Asn	Gln	Leu	Lys	Lys	Arg	Asn	Ile	Asn	Pro	Glu	Ser	His	Val
						135					140				
Lys	Gly	Asn	Glu	Asn	Ile	Leu	Tyr	Pro	Lys	Trp	Glu	Lys	Gly	His	Tyr
145					150					155				160	
Lys	Gly	Gly	Met	Gly	Glu	Tyr	Asp	Arg	Leu	Glu	Gln	Ala	Arg	Lys	Ile
				165					170					175	
Asn	His	Glu	Ala	Ala	Asp	Ala	Ser	Ala	Ser	Trp	Gly	Met	Phe	Gln	Ile
			180					185					190		
Met	Gly	Phe	Asn	Tyr	Ala	Ala	Cys	Gly	Glu	Lys	Ser	Val	Asp	Ser	Phe
			195				200					205			
Val	Lys	Ala	Met	Cys	Met	Ser	Glu	Cys	Arg	Gln	Leu	Val	Leu	Ser	Ala
			210			215					220				
Arg	Phe	Ile	Lys	Gln	Ser	Gly	Met	Leu	Ser	Ala	Leu	Gln	Ala	Lys	Asp
225					230					235				240	
Trp	Ala	Glu	Phe	Ala	Lys	Arg	Tyr	Asn	Gly	Pro	Ala	Tyr	Glu	Gln	Asn
				245					250					255	
Gln	Tyr	Asp	Lys	Lys	Leu	Ala	Ala	Ala	Tyr	Gln	Lys	Phe	Ser		

260

265

270

<210> 6825
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 6825
 Arg Arg Ile Leu Val Leu Val Glu Glu Gln Asn Pro Leu Ser Pro Arg
 1 5 10 15
 Gly Arg Gly Ile Ala Val Thr Asp Ala Pro Phe Tyr Gly Asn Gly Thr
 20 25 30
 Ser Glu Arg Leu Phe Asn Ile Gly Leu Cys Leu Pro Ser Gly Pro Thr
 35 40 45
 Leu Thr Asp Glu Asp Ile Arg Arg Val Val Asp Thr Ile Arg Lys Met
 50 55 60

<210> 6826
 <211> 251
 <212> PRT
 <213> B.fragilis

<400> 6826
 Asn Ala Asp Asn Tyr Met Ile Asp Lys Ser Glu Met Ile Phe Gly Val
 1 5 10 15
 Arg Ala Val Ile Glu Ala Ile Gln Ala Gly Lys Glu Ile Asp Lys Ile
 20 25 30
 Leu Val Lys Lys Asp Ile Gln Ser Asp Leu Ser Lys Glu Leu Phe Thr
 35 40 45
 Ala Leu Lys Gly Thr Leu Ile Pro Val Gln Arg Val Pro Val Glu Arg
 50 55 60
 Ile Asn Arg Ile Thr Arg Lys Asn His Gln Gly Val Val Ala Phe Ile
 65 70 75 80
 Ser Ser Val Thr Tyr Gln Lys Thr Glu Asp Leu Val Pro Phe Leu Phe
 85 90 95
 Glu Glu Gly Lys Asn Pro Phe Phe Val Met Leu Asp Gly Ile Thr Asp
 100 105 110
 Val Arg Asn Phe Gly Ala Ile Ala Arg Thr Cys Glu Cys Ala Gly Val
 115 120 125
 Asp Ala Val Ile Ile Pro Ala Lys Gly Ser Val Thr Val Asn Ala Asp
 130 135 140
 Ala Met Lys Thr Ser Ala Gly Ala Leu His Thr Leu Pro Val Cys Arg
 145 150 155 160
 Glu Gln Asn Leu Lys Thr Thr Leu Gln Tyr Leu Lys Asp Ser Gly Phe
 165 170 175
 Arg Ile Val Ala Ala Thr Glu Lys Gly Asp Tyr Asp Tyr Thr Lys Ala
 180 185 190
 Asp Tyr Thr Gly Pro Met Cys Ile Ile Met Gly Ala Glu Asp Thr Gly
 195 200 205
 Val Ser Tyr Asp Asn Leu Ala Leu Cys Asp Glu Trp Val Lys Ile Pro
 210 215 220
 Met Leu Gly Ser Ile Glu Ser Leu Asn Val Ser Val Ala Ala Gly Ile
 225 230 235 240
 Leu Ile Tyr Glu Gly Val Lys Gln Arg Thr Asn
 245 250

<210> 6827
 <211> 276
 <212> PRT

<213> B.fragilis

<400> 6827

Asn Leu Lys Asn His Ile Met Ala Gln Leu Ser Ser Val Ile Gly Ser
 1 5 10 15
 Ile Leu Arg Asp Ile Val Ser Ala Gln His Glu Ala Asn Leu Tyr Ser
 20 25 30
 Leu Ser Leu Gly Asp Ser Tyr Gly Lys Asp Gly Lys Ala Lys Asp Phe
 35 40 45
 Gln Leu Pro Asn Val Met Val Ser Asp Met Glu Leu Asp Leu Lys Tyr
 50 55 60
 Gly Val Lys Ser Ala Ser Glu Ser Gln Gln Gln Phe Asn Ile Lys Tyr
 65 70 75 80
 Asp Lys Phe Arg Gln Phe Leu Lys Glu Leu Cys Glu Gln Val Ala Arg
 85 90 95
 Val Ala Ile Ser Ser Ala Val Thr Thr Val Met Thr Ser Asp Ile Glu
 100 105 110
 Arg Asn Glu Gly Glu Lys His Phe Phe Glu Arg Leu Lys Lys Glu Asn
 115 120 125
 Lys Leu His Gln Glu Phe Cys Thr Phe Leu Ser Arg Asn Met Arg Asn
 130 135 140
 Ser Phe Arg Asn Asn Leu Tyr Asp Ala Val Asp Ser Ser Asn Gly Ser
 145 150 155 160
 Val Asn Asn Asp Val Val Ile Ser Arg Leu Thr Asp Val Val Arg Lys
 165 170 175
 Lys Phe Leu Tyr Asp Thr Asp Leu Asp Asp Leu Phe Ala Gly Glu Asp
 180 185 190
 Gly Glu Lys Leu Arg Asp Thr Ala Glu Lys Asn Ile Ile Lys Ala Met
 195 200 205
 Glu Ala Ile Val Lys Lys Leu Ser Val Asp Ala Asn Phe Lys Ser Leu
 210 215 220
 His Ser Phe Pro Gln Leu Asp Val Ala Ile Thr Ala Asp Glu Leu Met
 225 230 235 240
 Asn Met Pro Glu Glu Ala Ile His Ser Phe Lys Ile Lys Phe Ser Pro
 245 250 255
 Arg Asn Tyr Ser Val Ser Gln Thr Asp Asp Asp Ser Leu Leu Glu Asp
 260 265 270
 Phe Val Met Arg
 275

<210> 6828

<211> 178

<212> PRT

<213> B.fragilis

<400> 6828

Asn Gln Lys Asn Gly Leu Thr Thr Met Lys Leu Ser Lys Phe Leu Ser
 1 5 10 15
 Ser Arg Thr Gly Lys Arg Phe Tyr Asn Leu Cys Tyr Cys Trp Gly Ala
 20 25 30
 Cys Leu Val Ile Leu Gly Ala Val Phe Lys Ile Ala His Met Pro Tyr
 35 40 45
 Asp Asn Leu Phe Leu Met Ile Gly Leu Phe Thr Glu Val Phe Ile Phe
 50 55 60
 Phe Ile Ser Gly Phe Asp Glu Pro Ala Arg Glu Tyr Lys Trp Glu Arg
 65 70 75 80
 Val Phe Pro Leu Leu Asn Asp Lys Asn Ala Asn Ile Asn Pro His Thr
 85 90 95
 Gly Val Ser Asp Thr Leu Met Thr Glu Lys Tyr Ile Gln Gln Leu Lys

100 105 110
 Arg Leu Glu Asn Asn Val Cys Lys Leu Asn Glu Thr Tyr Glu Ala Gln
 115 120 125
 Ile Lys Gly Met Thr Glu His Ala Lys Ser Leu Asn Glu Met Asn Ser
 130 135 140
 Glu Glu Leu Lys Lys Glu Thr Glu Lys Met Ala Ala Tyr Ile Glu Leu
 145 150 155 160
 Leu Asn Lys Gln Tyr Ser Gln Met Leu Asn Ala Met Asn Val Lys Thr
 165 170 175
 Gly Lys

<210> 6829
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 6829
 Leu Trp Lys Lys Asn Asp Lys Phe Lys Ser Pro Asn Glu Leu Leu Lys
 1 5 10 15
 Glu Leu Ser Gly Gln Val Phe Ala Leu Val Arg Glu Leu Pro Lys Pro
 20 25 30
 Leu Ser Arg Glu Glu Met Arg Glu Leu Lys Arg Leu Cys Arg Phe Leu
 35 40 45
 Asn Asn Thr Val Lys Asp Gln Glu Arg Lys Gln Glu Val Arg Lys
 50 55 60

<210> 6830
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 6830
 Lys Thr Arg Lys Arg Leu Arg Arg Phe Pro Arg Asn Ile Gln Val Phe
 1 5 10 15
 Ser Ser Lys Leu Leu Ser Leu Phe Gly Lys Gly Leu Arg Val Cys His
 20 25 30
 Thr Ile Ile Gly Trp Ser Gly Val Phe Glu Gly Gln Lys Ser Lys Gly
 35 40 45
 Lys Leu Tyr Glu Ser Val Ser Gly Lys Pro Arg Gly Val Met Ile Tyr
 50 55 60
 Ile Ser Pro Ser Leu Ser Ile Ile Phe Lys Leu Tyr Ser Pro His Glu
 65 70 75 80

<210> 6831
 <211> 201
 <212> PRT
 <213> B.fragilis

<400> 6831
 Arg Val Gly Lys Asn Asn Lys Lys Tyr Ile Met Asp Glu Lys Leu Leu
 1 5 10 15
 Pro Tyr Phe Glu Asn Val Asn Asp Gly Gly Glu Gln Gly Lys Tyr Leu
 20 25 30
 Lys Glu Phe Gly Asn Glu Glu Thr Gln Gly Gly Ile Cys Leu His Leu
 35 40 45
 Ser Ile Thr Trp Leu Tyr Leu Trp His Asn Ser Thr Asn Lys Ala Pro
 50 55 60
 Asn Thr Ile Trp Gln Glu Met Lys Thr Pro Thr Leu Ile Gln Gln Ile

65		70		75		80									
Ala	Ser	Asn	Gln	Arg	Ser	Tyr	Gln	Gln	Tyr	Tyr	Pro	Asn	Ile	Ala	Asp
				85					90					95	
Asn	Val	Ser	Leu	Ala	Thr	Arg	Asn	Ser	Leu	His	Val	Thr	Gly	Thr	Asn
			100						105					110	
Ala	Gly	Glu	Ile	Tyr	Gln	Ile	Thr	Thr	Asn	Ala	Leu	Val	Lys	Ser	Asn
		115					120						125		
Met	Leu	Leu	Tyr	Val	Ile	Asn	Leu	Glu	Lys	Asp	His	Lys	Pro	Val	Gly
	130					135					140				
Arg	His	Ala	Ile	Ala	Ala	Ile	Ala	Thr	Arg	Gly	Arg	Phe	Tyr	Leu	Tyr
145					150					155					160
Asp	Pro	Asn	Val	Gly	Val	Met	Ser	Val	Pro	Met	Pro	Asn	Met	Lys	Glu
			165						170					175	
Leu	Ile	Glu	Lys	Ile	Pro	Tyr	Ile	Tyr	Gly	Lys	His	Ser	Leu	Asn	Ile
			180					185					190		
Ser	Gln	Thr	Ser	Val	Tyr	Asn	Ile	Ser							
		195					200								

<210> 6832
 <211> 114
 <212> PRT
 <213> B.fragilis

<400> 6832

Lys	Ser	Met	Asn	Pro	Ile	Leu	Asn	Lys	Met	Gly	Ala	Asn	Ala	Asn	Glu
1				5					10					15	
Gln	Lys	Lys	Leu	Leu	Met	Glu	Cys	Val	Ser	Met	Leu	Glu	Lys	Tyr	Val
			20					25					30		
Asn	Arg	Phe	Pro	Ala	Glu	Lys	Gly	Cys	Ala	Ser	Phe	Ser	Gly	Glu	Asp
		35					40					45			
Met	Lys	Leu	Trp	Lys	Glu	Val	Tyr	Phe	Pro	Lys	Leu	Val	Gln	Thr	Asp
	50					55					60				
Ile	Leu	Leu	Asp	Gly	Lys	Phe	Phe	Cys	Gly	Thr	Ser	Ser	Gly	Asn	Ser
65					70					75				80	
Gly	Ile	Gly	Thr	Asp	Gly	Tyr	Phe	Thr	Gly	Tyr	Glu	Phe	Phe	Gln	Phe
			85						90					95	
Ile	Tyr	Arg	Ala	Tyr	Lys	Ala	Leu	Tyr	Glu	Leu	Glu	Lys	Ala	Ser	Gln
			100					105					110		
Met	Arg														

<210> 6833
 <211> 323
 <212> PRT
 <213> B.fragilis

<400> 6833

Tyr	Ser	Met	Lys	Lys	Arg	Glu	Phe	Lys	Ile	Ser	Phe	Phe	Leu	His	Val
1				5					10					15	
Trp	Glu	Arg	Lys	Ala	Glu	Glu	Ile	Ser	Leu	Glu	Glu	Phe	His	Asn	Asp
			20					25					30		
Leu	Arg	Gly	Ala	Arg	Trp	Lys	Val	Leu	Ala	Glu	Ser	Tyr	Arg	Arg	Trp
		35					40					45			
Met	Arg	Thr	Gly	Met	Thr	Glu	Gly	Lys	Arg	Leu	Lys	Gly	Ala	Leu	
	50					55				60					
Asn	Ala	Val	Val	Val	Ala	Gly	Lys	Cys	Arg	Gly	Gly	His	Ala	Ala	Asn
65					70					75				80	
Gln	Val	Thr	Glu	Leu	Asn	Gly	Leu	Ala	Leu	Phe	Asp	Phe	Asp	His	Cys
				85					90					95	

Leu Glu Met Leu Ala Gly Met Lys Glu Lys Ala Gly Ala Leu Pro Tyr
 100 105 110
 Val Val Gly Ala Phe Val Ser Ile Ser Gly Glu Gly Leu Lys Leu Ile
 115 120 125
 Val Arg Ile Asp Ala Glu Asn Ala Gly Gln Tyr Ala Val Ala Tyr Pro
 130 135 140
 Val Val Ala Arg Glu Leu Glu Arg Val Leu Gly His Pro Cys Asp Met
 145 150 155 160
 Ser Cys Arg Asp Leu Gly Arg Ala Cys Tyr Ala Ser Tyr Asp Pro Glu
 165 170 175
 Ala Tyr Tyr Asn Pro Gly Ala Gly Val Phe Pro Trp Arg Glu Gln Val
 180 185 190
 Asp Gly Leu Leu Gln Ala Glu Gly Glu Cys Ser Ala Gln Ser Val Gly
 195 200 205
 Lys Ala Cys Pro Ala Gly Val Ala Ser Glu Ala Gly Asp Gly Phe Met
 210 215 220
 Gln Val Phe Leu Asn Asp Phe Asp Ala Arg Asn Pro Phe Val Ala Gly
 225 230 235 240
 Gly Arg His Ala Phe Val Leu Lys Leu Gly Arg Val Ala Arg Tyr Lys
 245 250 255
 Gly Phe Ser Pro Glu Glu Met Arg Leu Leu Gln Lys Ala Val Val Glu
 260 265 270
 Lys Tyr Ala Gln Ala Asp Phe Gly Ser Gly Glu Ile Glu Lys Thr Leu
 275 280 285
 Ser Ser Gly Tyr Gln Tyr Val Ser Val Arg Arg Ala Asp Ala Val Met
 290 295 300
 Ala Ser Gln Gly Pro Lys Val Gln Gly Pro Leu Tyr Ala Leu Arg Gly
 305 310 315 320
 Gly Gly Glu

<210> 6834
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 6834
 Ile Lys Met Lys Arg Ile Thr Asp Arg Thr Asn Phe Ser Val Ile Asn
 1 5 10 15
 Thr Val Val Asn Tyr Ser Glu Ala Pro Tyr Ala Val Cys Pro Gln Cys
 20 25 30
 Asn Ile Arg Thr Ala Cys Arg Arg Phe Pro Ser Ser Ile His Ser Val
 35 40 45
 Arg His Leu Tyr Pro Asp Arg Ser Thr Thr Gln Lys His Lys Tyr Asp
 50 55 60
 Lys Asp Lys Ile Gln Lys Lys Ala Val Met Ile Pro Ile Phe Thr His
 65 70 75 80
 Ile

<210> 6835
 <211> 449
 <212> PRT
 <213> B.fragilis

<400> 6835
 Lys Val Ser Lys Lys Arg Glu Thr Lys Asn Ser Phe Asn Ile Phe Leu
 1 5 10 15
 Met Thr Lys Met Ile Met Lys Lys Ser Asp Leu Phe Lys Ile Gly Val

	20		25		30
Leu	Leu	Met	Ala	Thr	Thr
	35				
Asp	Glu	Lys	Lys	Pro	Glu
	50				
Glu	Tyr	Tyr	Ile	Ala	Gly
	65				
Gly	Val	Glu	Val	Lys	Ala
Gly	Ala	Tyr	Lys	Leu	Thr
Phe	Ser	Lys	Glu	Gly	Tyr
Ala	Asp	Asn	Ala	Ala	Asn
Ser	Lys	Lys	Ala	Pro	Glu
Val	Val	Val	Thr	Asp	Lys
Ala	Val	Ile	Ile	Pro	Pro
Val	Thr	Pro	Tyr	Glu	Glu
Gly	Asn	Asn	Val	Glu	Thr
Thr	Ala	Gln	Glu	Val	Thr
Asn	Lys	Ala	Ser	Glu	His
Gln	Lys	Thr	Thr	Thr	Arg
Ala	Ile	Tyr	Asp	Ser	Glu
Gly	Ala	Ser	Leu	Ser	Gly
Thr	Thr	Gly	Lys	Glu	Arg
Ser	Asn	Glu	Gly	Asn	Met
Glu	Ala	Thr	Ala	Gly	Trp
Met	Asn	Ala	Gly	Val	Asp
Ile	Asn	Ser	Ala	Ile	Glu
Val	Ala	His	Glu	Leu	Ile
Tyr	Leu	Asn	Gln	Ala	Lys
Ser	Gly	Gly	Arg	Thr	Val
Gln	Ile	Thr	Thr	Asn	Val

<210> 6836

<211> 403

<212> PRT

<213> *B. fragilis*

<220>

<221> UNSURE

<222> (84)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6836

Val Asn Arg Lys Ile Ile Met Leu Asn Gly Lys Lys Ile Ile Leu Gly
 1 5 10 15
 Ile Thr Gly Ser Ile Ala Ala Tyr Lys Ala Cys Tyr Ile Ile Arg Gly
 20 25 30
 Leu Ile Lys Gln Gly Ala Glu Val Gln Val Val Ile Thr Pro Ala Gly
 35 40 45
 Lys Glu Phe Ile Thr Pro Ile Thr Leu Ser Ala Leu Thr Gly Lys Pro
 50 55 60
 Val Ile Ser Glu Phe Phe Ala Gln Arg Asp Gly Thr Trp Asn Ser His
 65 70 75 80
 Val Asp Leu Xaa Leu Trp Ala Asp Ala Met Leu Ile Ala Pro Ala Thr
 85 90 95
 Ala Ser Thr Ile Gly Lys Met Ala Asn Gly Ile Ala Asp Asn Met Leu
 100 105 110
 Ile Thr Thr Tyr Leu Ser Ala Lys Ala Pro Val Phe Val Ala Pro Ala
 115 120 125
 Met Asp Leu Asp Met Phe Ala His Pro Ser Thr Gln Lys Asn Leu Asp
 130 135 140
 Thr Leu Arg Ser Tyr Gly Asn His Ile Ile Glu Pro Ala Ser Gly Glu
 145 150 155 160
 Leu Ala Ser His Leu Val Gly Lys Gly Arg Met Glu Glu Pro Glu Asn
 165 170 175
 Ile Ile Arg Val Leu Asp Glu Phe Phe Ser Ser Thr Gly Glu Leu Ala
 180 185 190
 Gly Lys Lys Val Leu Ile Thr Ala Gly Pro Thr Tyr Glu Lys Ile Asp
 195 200 205
 Pro Val Arg Phe Ile Gly Asn Tyr Ser Ser Gly Lys Met Gly Phe Ala
 210 215 220
 Leu Ala Glu Glu Cys Ala Arg Arg Gly Ala Asp Val Val Leu Ile Ala
 225 230 235 240
 Gly Pro Val Gln Gln Lys Thr Tyr His Ser His Ile Thr Arg Ile Asp
 245 250 255
 Val Glu Ser Ala Gln Asp Met Tyr Glu Ala Ala Met Ala Gln Tyr Pro
 260 265 270
 Leu Val Asp Ala Gly Ile Leu Cys Ala Ala Val Ala Asp Phe Thr Pro
 275 280 285
 Asp Ala Val Ala Asp Lys Lys Ile Lys Arg Glu Gly Asp Glu Leu Leu
 290 295 300
 Leu His Leu Lys Pro Thr His Asp Ile Ala Ala Ala Leu Gly Lys Ile
 305 310 315 320
 Lys Thr Pro Gly Gln Lys Leu Ile Gly Phe Ala Leu Glu Thr Asn Asp
 325 330 335
 Glu Gln Arg Asn Ala Glu Gly Lys Leu Ile Arg Lys Asn Phe Asp Phe
 340 345 350
 Ile Val Leu Asn Ser Leu Asn Asp Ala Gly Ala Gly Phe Arg Tyr Asp
 355 360 365
 Thr Asn Lys Ile Ser Ile Leu Ser Cys Arg Gly Arg Thr Asp Tyr Pro
 370 375 380
 Leu Lys Ser Lys Thr Glu Val Ala Arg Asp Ile Ile Asp Arg Met Ile
 385 390 395 400
 Lys Glu Met

<210> 6837
 <211> 455
 <212> PRT
 <213> B.fragilis

<400> 6837

Ser	Asp	Ala	Glu	Cys	His	Glu	Cys	Lys	Asn	Arg	Glu	Ile	Arg	Arg	Arg
1				5					10					15	
Asp	Met	Ala	Lys	Tyr	Thr	Leu	Pro	Pro	Arg	Gln	Lys	Met	Ile	Asn	Leu
			20					25					30		
Leu	Tyr	Val	Val	Leu	Ile	Ala	Met	Leu	Ala	Ile	Asn	Ile	Ser	Ser	Asp
		35					40					45			
Val	Leu	Glu	Gly	Tyr	Gly	Gln	Met	Asn	Asn	Asp	Tyr	Leu	Pro	Gln	Ile
	50					55					60				
Lys	Lys	Leu	Glu	Glu	Tyr	Asn	Arg	Thr	Leu	Leu	Glu	Arg	Ile	Asn	Ser
65					70					75				80	
Arg	Asn	Asp	Lys	Ala	Ala	Leu	Ser	Ala	Gln	Asn	Ile	Asp	Ala	Ala	Ala
				85					90					95	
Gly	Lys	Leu	Met	Asp	Thr	Leu	Glu	Glu	Leu	Lys	Glu	Asp	Ile	Ala	Arg
			100					105					110		
Lys	Ala	Asp	Lys	Glu	Lys	Tyr	Glu	Ala	Gly	Lys	Leu	Lys	Ala	Lys	Asp
			115					120					125		
Asp	Leu	Asn	Ala	Val	Pro	Glu	Val	Phe	Leu	Ser	Val	Thr	Gly	Gly	Lys
	130						135					140			
Gly	Lys	Ala	Leu	Arg	Leu	Ser	Leu	Asp	Thr	Phe	Lys	Glu	Asp	Ala	Leu
145					150					155				160	
Ser	Leu	Ile	Lys	Asn	Asp	Ala	His	Arg	Gln	Leu	Val	Gly	Thr	Tyr	Leu
				165					170					175	
Asn	Thr	Glu	Ser	Pro	Gly	Thr	Gly	Ile	Ser	Trp	Glu	Lys	Glu	Thr	Phe
			180					185					190		
Ser	Tyr	Leu	Pro	Ala	Ile	Gly	Gly	Val	Thr	Phe	Ile	Asn	Lys	Met	Gln
		195					200					205			
Glu	Glu	Val	Leu	Leu	Cys	Val	Asn	Glu	Val	Tyr	Arg	Ser	Leu	Leu	Tyr
	210					215					220				
Glu	Glu	Ala	Glu	Asp	Gly	Lys	Gly	Gly	Ala	Phe	Val	Phe	Ile	Asn	Glu
225					230					235				240	
Asp	Gln	Met	Ile	Val	Asn	Lys	Asp	Gly	Thr	Val	Asp	Leu	Pro	Val	Val
				245					250					255	
Gln	Ile	Thr	Pro	Ala	Leu	Thr	Ser	Ile	Leu	Tyr	Thr	Asp	Tyr	Glu	Asn
			260					265					270		
Pro	Leu	Asn	Ile	Leu	Thr	Ala	Gly	Ile	Pro	Phe	Asn	Glu	Val	Thr	Phe
		275					280					285			
Arg	Met	Thr	Asn	Gly	Lys	Ile	Leu	Lys	Arg	Gly	Asn	His	Cys	Ile	Ala
	290					295					300				
Val	Pro	Asp	Glu	Lys	Ala	Gln	Thr	Ala	Thr	Val	Thr	Ala	Thr	Gln	Ile
305					310					315				320	
Lys	Asn	Gly	Val	Ala	Arg	Gln	Leu	Ala	Glu	Tyr	Arg	Tyr	Thr	Val	Lys
				325					330					335	
Ala	Leu	Pro	Asp	Pro	Thr	Pro	Tyr	Ile	Leu	Cys	Thr	Asp	Glu	Asn	Gly
		340					345					350			
Arg	Thr	Val	Gln	Tyr	Arg	Gly	Asn	Val	Pro	Ile	Asn	Lys	Arg	Leu	Val
		355					360					365			
Ser	Asn	Met	Thr	Gln	Leu	Gly	Ala	Ser	Ile	Ser	Asp	Gly	Pro	Lys	Ala
	370					375					380				
Asn	Tyr	Glu	Ile	Ser	Ser	Phe	Glu	Met	Val	Leu	Ile	Lys	Gly	Ser	Ser
385					390					395				400	
Lys	Ala	Val	Thr	Ser	Ile	Pro	Asn	Thr	Gly	Asn	Lys	Phe	Ser	Ala	Arg

405 410 415
 Gln Met Glu Leu Ile Arg Gln Leu Glu Lys Gly Asp Lys Phe Tyr Ile
 420 425 430
 Thr Ser Ile Val Val Thr Gly Pro Gly Asn Lys Lys Lys Gln Ile Ala
 435 440 445
 Ser Ile Asn Val Val Leu Ile
 450 455

<210> 6838
 <211> 418
 <212> PRT
 <213> B.fragilis

<400> 6838

Cys Ile Asn Glu Asp Arg Met Met Asn Gly Ile Phe Glu Lys Leu Tyr
 1 5 10 15
 Asp Met Thr Ala Phe Ser Asn Ile Val Ala Glu Pro Gln Phe Leu Val
 20 25 30
 Met Tyr Val Ile Ala Phe Val Leu Leu Tyr Leu Gly Ile Lys Lys Gln
 35 40 45
 Tyr Glu Pro Leu Leu Leu Val Pro Ile Ala Phe Gly Val Leu Leu Ala
 50 55 60
 Asn Phe Pro Gly Gly Gly Met Gly Val Ile Gln Ala Asp Glu Asn Gly
 65 70 75 80
 Met Ile Leu Val Asn Gly Val Met Lys Asn Ile Trp Glu Met Pro Leu
 85 90 95
 His Asp Ile Ala His Glu Leu Gly Leu Met Asn Phe Val Tyr Tyr Met
 100 105 110
 Leu Ile Lys Thr Gly Phe Leu Pro Pro Ile Ile Phe Met Gly Val Gly
 115 120 125
 Ala Leu Thr Asp Phe Gly Pro Met Leu Arg Asn Leu Arg Leu Ser Ile
 130 135 140
 Phe Gly Ala Ala Ala Gln Leu Gly Ile Phe Thr Val Leu Leu Val Ala
 145 150 155 160
 Ile Leu Met Gly Phe Thr Pro Ser Glu Ala Ala Ser Leu Gly Ile Ile
 165 170 175
 Gly Gly Ala Asp Gly Pro Thr Ala Ile Phe Thr Thr Ile Lys Leu Ala
 180 185 190
 Pro His Leu Leu Gly Pro Ile Ala Ile Ala Ala Tyr Ser Tyr Met Ala
 195 200 205
 Leu Val Pro Val Ile Ile Pro Leu Val Val Arg Leu Leu Cys Thr Lys
 210 215 220
 Lys Glu Leu Ser Ile Asn Met Lys Glu Gln Glu Lys Lys Tyr Pro Ser
 225 230 235 240
 Lys Thr Glu Ile Lys Asn Leu Arg Val Leu Lys Ile Ile Phe Pro Ile
 245 250 255
 Val Val Thr Thr Val Val Ala Leu Phe Val Pro Ser Ala Val Pro Leu
 260 265 270
 Ile Gly Met Leu Met Phe Gly Asn Leu Val Lys Glu Ile Gly Ala Asn
 275 280 285
 Thr Phe Arg Leu Phe Asp Ala Ala Ser Asn Ser Ile Met Asn Ala Ala
 290 295 300
 Thr Ile Phe Leu Gly Leu Ser Val Gly Ala Thr Met Thr Ser Glu Ala
 305 310 315 320
 Phe Leu Asn Trp Thr Thr Ile Gly Ile Val Val Gly Gly Phe Leu Ala
 325 330 335
 Phe Ala Leu Ser Ile Ala Gly Gly Ile Phe Phe Val Lys Leu Val Asn
 340 345 350
 Leu Phe Thr Lys Lys Lys Ile Asn Pro Leu Ile Gly Ala Thr Gly Leu

355	360	365
Ser Ala Val Pro Met Ala	Ser Arg Val Ala Asn Asp	Ile Ala Leu Lys
370	375	380
Tyr Asp Pro Lys Asn His Val	Leu Gln Tyr Cys Met	Ala Ser Asn Ile
385	390	395
Ser Gly Val Ile Gly	Ser Ala Val Ala Gly	Val Leu Ile Ser Phe
405	410	415
Leu Ser		

<210> 6839

<211> 398

<212> PRT

<213> B.fragilis

<400> 6839

Glu Val Cys Glu Thr Asn Lys Arg Ile Ile Met Asn Leu Asp Leu Asp	1	5	10	15
Phe Ile Leu Leu Asn Leu Leu Leu Tyr Thr Phe Trp Lys Ala Gly	20	25	30	
Arg Asn Ile Ser Gln Ser Met Asp Tyr Trp His Asn Ala Gly Leu Cys	35	40	45	
Val Ile Leu Phe Ser Ile Val Gln Gly Cys Arg Phe Ala Arg Gly Asn	50	55	60	
Asp Tyr Phe Ala Tyr Ser Arg Ile Phe Arg Glu Gly Ser Leu His Val	65	70	75	80
Glu Asn Pro Phe Phe Ser Val Ile Asn Glu Leu Leu Arg Ile Val Gly	85	90	95	
Ile Asn Glu Tyr Ser Cys Phe Met Val Tyr Ala Phe Thr Phe Ala Leu	100	105	110	
Cys Ala Met Ile Phe Met Lys Asp Tyr Arg Thr Tyr Ala Arg Tyr Met	115	120	125	
Phe Pro Leu Phe Leu Ile Gly Phe Met Asn Phe Glu Glu Ser Met Ile	130	135	140	
Arg Gln Ala Phe Ser Tyr Ser Phe Phe Phe Leu Tyr Leu Lys Tyr Leu	145	150	155	160
Phe Lys Leu Lys Phe Asn Lys Pro Lys Asp Ile Leu His Asn His Lys	165	170	175	
Lys Leu Ile Tyr Cys Ile Ile Phe Ala Ile Leu Thr Leu Ala Ile His	180	185	190	
Thr Gly Asn Ile Ile Ser Leu Phe Val Ile Thr Thr Leu Tyr Ile Phe	195	200	205	
Trp Arg Lys Pro Phe Gln Pro Gln Phe Ala Ile Pro Ile Tyr Val Ala	210	215	220	
Cys Val Tyr Ile Leu Pro His Ile Phe Asn Phe Asn Trp Leu Glu Pro	225	230	235	240
Ile Leu Ser Phe Ala Ala Asp Thr Asn Glu Arg Ala Ala Glu Tyr Val	245	250	255	
Lys Asn Ala Asp Tyr Trp Phe Ser Glu Lys Gly Glu Asn Asp Gln Tyr	260	265	270	
Asp Lys Asn Phe Ile Val Glu Ile Ile Gln Val Ile Gly Ser Ser Ala	275	280	285	
Leu Met Tyr Phe Gly Tyr Arg Leu Ile Ile Glu Lys Leu Pro Lys His	290	295	300	
Tyr Ala Leu Ile Thr Met Leu Asn Thr Phe Ile Ile Gly Leu Cys Ile	305	310	315	320
Glu Ser Ile Phe Val Lys Leu Glu Ile Leu His Arg Ile Gly Gln Thr	325	330	335	
Leu Asp Ile Val Gly Tyr Phe Ala Leu Ala Ile Val Val Ser Tyr Lys				

	340		345		350										
Thr	Ile	Lys	Leu	Lys	Pro	Ile	Gln	Lys	Val	Ala	Tyr	Val	Cys	Leu	Leu
	355		360		365										
Trp	Phe	Val	Tyr	Tyr	Tyr	Val	Lys	Tyr	Leu	Phe	Phe	Ser	Gly	Arg	Thr
	370		375		380										
Met	Phe	Ile	Trp	Asp	Thr	His	Tyr	Pro	Phe	Phe	Lys	Phe	Ile		
385			390		395										

<210> 6840

<211> 393

<212> PRT

<213> B.fragilis

<400> 6840

Ile	Thr	Ile	Asp	Met	Ala	Val	Lys	Ile	Leu	Ser	Val	Asp	Asp	Glu	Leu
1				5				10						15	
Asp	Leu	Glu	Val	Leu	Leu	Thr	Gln	Tyr	Phe	Arg	Arg	Gln	Ile	Arg	Lys
			20				25						30		
Gly	Glu	Tyr	Glu	Phe	Ala	Phe	Ala	His	Asn	Gly	Leu	Glu	Ala	Leu	Gln
		35				40						45			
Lys	Leu	Leu	Glu	Thr	Pro	Asp	Phe	Asp	Ile	Ile	Leu	Ser	Asp	Ile	Asn
	50				55						60				
Met	Pro	Glu	Met	Asp	Gly	Leu	Thr	Leu	Leu	Ala	Lys	Val	Asn	Glu	Leu
65				70						75				80	
Lys	Asn	Pro	Ala	Met	Lys	Cys	Ile	Met	Val	Ser	Ala	Tyr	Gly	Asp	Met
				85					90					95	
Asp	Asn	Ile	Arg	Ser	Ala	Met	Asn	Lys	Gly	Ala	Phe	Asp	Phe	Ala	Thr
			100					105					110		
Lys	Pro	Ile	Asp	Leu	Asp	Asp	Leu	Ser	Arg	Thr	Ile	Glu	Lys	Ala	Ile
		115					120					125			
Glu	Gln	Val	Arg	Tyr	Ile	Arg	Glu	Ser	Gln	Gln	Glu	His	Asn	Gln	Leu
		130				135					140				
Glu	Ser	Ile	Lys	Asn	Asp	Leu	Ala	Ile	Ala	Gly	Glu	Ile	Gln	Gln	Thr
145				150						155					160
Ile	Leu	Pro	Arg	Ser	Phe	Pro	Pro	Phe	Pro	Glu	Leu	Thr	Glu	Val	Val
				165					170					175	
Asp	Ile	Tyr	Ala	Ser	Met	Thr	Pro	Ala	Lys	Asp	Val	Gly	Gly	Asp	Phe
			180					185					190		
Tyr	Asp	Phe	Gln	Ile	Asp	Asp	Glu	Arg	Ile	Gly	Leu	Val	Ile	Ala	
	195					200					205				
Asp	Val	Ser	Gly	Lys	Gly	Val	Pro	Ala	Ser	Leu	Phe	Met	Ala	Val	Ser
	210					215					220				
Arg	Thr	Leu	Leu	Arg	Ala	Thr	Ala	Leu	Arg	Gly	Val	Ser	Ser	Ala	Glu
225				230						235				240	
Cys	Leu	Thr	Tyr	Ala	Asn	Lys	Leu	Leu	Cys	Lys	Glu	Ser	Leu	Asp	Ser
				245					250					255	
Met	Phe	Val	Thr	Val	Phe	Tyr	Gly	Ile	Tyr	His	Tyr	Lys	Thr	Gly	Met
		260					265						270		
Met	Asp	Tyr	Thr	Asn	Ala	Gly	His	Asn	Pro	Pro	Tyr	Leu	Leu	Arg	Gly
	275					280						285			
Gly	Arg	Thr	Val	Glu	Cys	Leu	Pro	Val	Ala	Ser	Asn	Phe	Val	Val	Gly
	290					295					300				
Val	Phe	Asp	Asp	Ile	Glu	Phe	Glu	Ser	Asn	Thr	Leu	Thr	Phe	Gly	Ile
305				310						315				320	
Gly	Asp	Thr	Leu	Leu	Leu	Tyr	Thr	Asp	Gly	Val	Thr	Glu	Ala	Phe	Asn
			325						330					335	
Asp	Lys	Arg	Glu	Gln	Phe	Ser	Glu	Ser	Asn	Leu	Gln	Asp	Ile	Leu	Ala
			340					345					350		
Ser	Met	His	Glu	Ser	Ser	Ser	Ala	Lys	Glu	Val	Val	Thr	Ser	Val	Leu

<211> 206
 <212> PRT
 <213> B.fragilis

<400> 6843

Tyr	Asn	Met	Asp	Asn	Lys	Lys	Val	Arg	Ser	Thr	Ser	Ser	Gln	Val	Met
1				5					10					15	
Glu	Leu	Gln	Gln	Leu	Ile	Ala	Gly	Pro	Leu	Ile	Ala	Thr	Ile	Glu	Ala
			20					25					30		
Asp	Ser	Leu	Ser	Ser	Gln	Arg	Tyr	Leu	Asp	Tyr	Leu	Met	Lys	Ile	Ala
		35					40					45			
Phe	Glu	Ser	Tyr	Asp	Pro	Val	Thr	Gly	Arg	Thr	Gly	Lys	Ile	Arg	Met
	50					55					60				
Leu	Thr	Phe	Asn	Tyr	Gln	Ser	Gln	Asp	Ala	Gly	Gly	Gly	Arg	Thr	Gln
65					70					75					80
Ser	Val	Ser	Ile	Pro	Ile	Leu	Thr	Leu	Val	Pro	Leu	Pro	Leu	Leu	Gln
				85					90					95	
Val	Gln	Glu	Ala	Asp	Phe	Asp	Phe	Asp	Ile	Lys	Ile	Leu	Asp	Ala	Leu
			100					105					110		
Ser	Glu	Thr	Ala	Glu	Glu	Lys	Phe	Ser	Leu	Glu	Glu	Gly	Lys	Ser	Val
		115					120					125			
Asn	Glu	Pro	Gln	Ser	Gly	Gly	Gly	Phe	Lys	Leu	Arg	Ala	Ser	Leu	Ala
	130					135					140				
Pro	Lys	Gln	Gly	Glu	Gly	Ser	Ser	Thr	Ser	Asn	Val	Gln	Gln	Ser	Leu
145					150					155					160
Ser	Ala	Asn	Met	Lys	Val	Lys	Val	Lys	Met	Arg	Gln	Ala	Asp	Met	Pro
				165					170					175	
Ala	Gly	Leu	Ser	Asn	Leu	Leu	His	Leu	Thr	Ala	Ser	Asn	Met	Gln	Val
			180					185					190		
Glu	Glu	Thr	Glu	Ala	Glu	Glu	Ile	Thr	Glu	Gly	Gly	Asn	Lys		
		195					200					205			

<210> 6844
 <211> 193
 <212> PRT
 <213> B.fragilis

<400> 6844

Arg	Ile	Ala	Glu	Ser	Ser	Glu	Cys	Ala	Gly	Glu	Phe	Gly	Glu	Lys	Lys
1				5					10					15	
Gln	Val	Gln	Arg	Leu	Asn	Gly	Arg	Gly	Met	Lys	Leu	Thr	Phe	Phe	Lys
			20					25					30		
Arg	Met	Gly	Glu	Lys	Ile	Arg	His	Pro	Phe	Arg	Lys	Glu	Ile	Pro	Lys
		35					40					45			
Thr	Ile	Pro	Val	Val	Glu	Thr	Ala	Pro	Gln	Pro	Val	Ala	Asp	Asn	Thr
	50					55					60				
Thr	Glu	Ala	Thr	Ala	Glu	Asp	Ser	Ser	Val	Ile	Arg	Ser	Ala	Asp	Gln
65					70					75					80
Cys	Gly	Glu	Gln	Ala	Arg	Tyr	Phe	Leu	Leu	Arg	Asn	Asn	Lys	Pro	Val
			85					90					95		
Gly	Lys	Pro	Phe	Ser	Tyr	Tyr	His	Pro	Glu	Ile	Arg	Ile	Val	His	Val
		100					105						110		
Gly	Ser	Phe	Val	Asn	Ala	Phe	Leu	Phe	Phe	Leu	Arg	Met	Cys	Asp	Gln
		115					120					125			
Arg	Leu	Leu	Thr	Tyr	Arg	Gln	Thr	Gly	Glu	Tyr	Leu	His	Cys	Thr	Ala
	130					135					140				
Val	Phe	Pro	Asp	Glu	Ser	Gly	Asn	Leu	Tyr	Phe	Thr	Asn	Lys	Val	Thr
145					150					155					160
Cys	Arg	Asn	Lys	Glu	Asn	Thr	Val	Ala	Val	Leu	Lys	Ile	Asp	Tyr	Val

165 170 175
 Gly Leu Lys Pro Lys Ile Thr Glu Ile Arg Phe Glu Leu Asn Ile Lys
 180 185 190
 Lys

<210> 6845
 <211> 190
 <212> PRT
 <213> B.fragilis

<400> 6845
 Arg Ile Arg Glu Arg Pro Ser Leu Pro Phe Leu Lys Pro Tyr Ser Gln
 1 5 10 15
 Ser Asp Met Lys Ser Trp Leu Ala Ala Tyr Val Arg Leu Tyr His Glu
 20 25 30
 Lys Lys Thr Arg Asp Arg Leu Thr Ala Met Gly Ile Glu Ser Phe Leu
 35 40 45
 Pro Val Gln Glu Glu Ile His Gln Trp Ser Asp Arg Arg Lys Lys Ile
 50 55 60
 Glu Arg Val Val Ile Pro Met Met Ile Phe Val His Val Asp Pro Ala
 65 70 75 80
 Glu Arg Ala Glu Val Leu Thr Leu Ser Ser Val Ser Arg Tyr Met Val
 85 90 95
 Leu Arg Gly Gln Ser Thr Pro Ala Val Ile Pro Asp Glu Gln Met Glu
 100 105 110
 Arg Phe Arg Phe Met Leu Asp Tyr Ser Glu Glu Ala Ile Glu Val Cys
 115 120 125
 Ser Ser Pro Leu Ala Pro Gly Glu Gln Val Arg Val Ile Lys Gly Pro
 130 135 140
 Leu Ala Gly Leu Glu Gly Glu Leu Val Thr Ile Asp Gly Lys Ser Lys
 145 150 155 160
 Val Ala Val Arg Leu Asp Met Leu Gly Cys Ala His Val Asp Met Pro
 165 170 175
 Val Gly Phe Val Glu Arg Val Gly Lys Met Glu Ala Val Arg
 180 185 190

<210> 6846
 <211> 549
 <212> PRT
 <213> B.fragilis

<400> 6846
 Arg Asn Ile Leu Met Glu Lys Leu His Ile Arg Lys Ile Ala Ser Leu
 1 5 10 15
 Gly Leu Met Leu Cys Phe Phe Thr Gly Val Gly Ala Gln Thr Pro Val
 20 25 30
 Lys Val Glu Lys Arg Lys Glu His Lys Ser Asn Thr Val Ile Pro Val
 35 40 45
 Val Lys Gly Asn Val Thr Asp Thr Leu Ser Leu Val Ser Phe Asn Asp
 50 55 60
 Phe His Gly Ala Phe Ala Cys Asp Lys Gly Val Pro Gly Ala Gly Gln
 65 70 75 80
 Leu Val Gln Thr Val Leu Thr Gln Lys Glu Lys Asn Lys Asn Thr Ile
 85 90 95
 Val Leu Ser Val Gly Asp Asn Phe Ser Gly Ser Tyr Phe Ser Arg Ile
 100 105 110
 Thr Arg Gly Asn Pro Leu Pro Glu Met Phe Gln Glu Met Asp Val Lys
 115 120 125

Met Ser Ala Val Gly Asn His Glu Phe Asp Trp Gly Leu Pro Tyr Leu
 130 135 140
 Thr Asp Thr Ala Lys Val Tyr Met Asn Phe Val Ala Ala Asn Ile Ile
 145 150 155 160
 Thr Asp Arg Gly Asp Thr Leu Glu Trp Ala Lys Pro Tyr Arg Ile Val
 165 170 175
 Thr Leu Asn Leu Lys Asn Gly Gly Thr Val Arg Val Ala Phe Val Gly
 180 185 190
 Leu Thr Thr Thr Asp Thr Ala His Lys Thr Ser Pro Glu Asn Ile Lys
 195 200 205
 Gly Leu Ala Phe Val His Pro Val Tyr Ala Ala Arg Val Glu Thr Ala
 210 215 220
 Cys Arg Leu Lys Lys Glu Gly Lys Val Asp Met Val Val Leu Leu Met
 225 230 235 240
 His Ile Gly Thr Asn Met Lys Asn Arg Asp Ile Ile Glu Glu Glu Asn
 245 250 255
 Ala Lys Leu Leu Pro Phe Leu Lys Gly Val Asp Ala Ile Ile Ser Gly
 260 265 270
 His Ser His Glu Val Val Leu Ser Lys Val Asn Asp Val Pro Ile Ile
 275 280 285
 Gln Ala Gly Val Asn Gly Thr His Ile Gly Lys Leu Asp Phe Arg Val
 290 295 300
 Val Lys Glu Glu Gly Gly Asn Arg Ile Ser Tyr Ile Gly Gly Asp Thr
 305 310 315 320
 Ile Arg Thr Glu Gly Pro Ser Asn Ala His Ile Asp Ser Leu Val Asp
 325 330 335
 Lys Val Leu Ala Val Tyr Gly Leu Ser Glu Lys Leu Ile Leu Ala Lys
 340 345 350
 Asp Ala Leu Ile His Asp Arg Thr Ile Asn Lys Trp Glu Tyr Thr Pro
 355 360 365
 Val Gly Ala Tyr Val Thr Ala Ala Tyr Val Arg Ser Phe Leu Glu Asn
 370 375 380
 Glu Lys Val Pro Ala Glu Leu Lys Val Leu Pro Val Ile Gly Val Asn
 385 390 395 400
 His Phe Gly Gly Leu Arg Ala Ser Ile Pro Ala Gly Glu Val Thr Arg
 405 410 415
 Leu Arg Ala Gly Asn Val Leu Pro Phe Gly Gly Asn Val Val Ala Tyr
 420 425 430
 Glu Phe Thr Gly Glu Arg Leu Lys Gln Leu Leu Asp Asp Gly Arg Arg
 435 440 445
 Asn Lys Asn Gly Phe Leu Gln Thr Ser Tyr Leu Lys Leu His Leu Asn
 450 455 460
 Ser Lys Gly Asn Val Glu Thr Ile Thr Asp Cys Arg Thr Asn Lys Ile
 465 470 475 480
 Ile Arg Asp Asp Asp Lys Cys Ile Val Val Leu Asp Ala Phe Ile Thr
 485 490 495
 Ser Gly Gly Asp Gly Tyr Asp Ser Lys Leu Phe Ser Gly Tyr Glu Ile
 500 505 510
 Gly Asp Phe Asn Ser Gln Asn Leu Glu Thr Thr Val Ala Phe Ile Asp
 515 520 525
 Tyr Leu Lys Ser Leu Lys Gly Phe Val Ser Ser Glu Ala Ala Pro Ile
 530 535 540
 Pro Ile Val Gln Lys
 545

<210> 6847

<211> 75

<212> PRT

<213> B.fragilis

<400> 6847

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Ser His Thr Leu Phe Phe Leu Gln Ala Tyr Pro Met Pro Ile Ser Ile
1          5          10          15
Leu Cys His Thr Leu Pro Thr Tyr Asp Phe Thr Ala Pro Trp Ser Tyr
          20          25          30
Val Gln Pro Leu Ser Arg Ser His Ala Asn Ala Pro Arg Phe Leu Ala
          35          40          45
Asp Leu Asn Pro Ala Asp Lys Phe Met Glu Leu Asn Leu Pro His Val
          50          55          60
Gly His Leu Ser His Gly Ser Leu Leu Thr Thr
          65          70          75

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<210> 6848

<211> 258

<212> PRT

<213> B.fragilis

<400> 6848

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Thr Met Lys Leu Asn Leu Lys Asn Pro Ile Val Phe Phe Asp Leu Glu
1          5          10          15
Thr Thr Gly Thr Asn Ile Asn Ser Asp Arg Ile Val Glu Ile Cys Tyr
          20          25          30
Leu Lys Val Tyr Pro Asn Gly Asn Glu Glu Ser Lys Thr Leu Arg Ile
          35          40          45
Asn Pro Glu Met Pro Ile Pro Ala Glu Ser Ser Ala Val His Gly Ile
          50          55          60
Tyr Asp Ala Asp Val Ala Asp Cys Pro Thr Phe Lys Glu Val Ala Lys
65          70          75          80
Ser Ile Ala Asn Asp Ile Glu Gly Cys Asp Leu Ala Gly Phe Asn Ser
          85          90          95
Asn Arg Phe Asp Ile Pro Val Leu Ala Glu Glu Phe Leu Arg Ala Gly
          100          105          110
Val Asp Ile Asp Met Ser Lys Arg Lys Phe Val Asp Val Gln Val Ile
          115          120          125
Phe His Lys Met Glu Gln Arg Thr Leu Thr Ala Ala Tyr Lys Phe Tyr
          130          135          140
Cys Gly Arg Asn Leu Glu Asp Ala His Thr Ala Glu Ala Asp Thr Arg
145          150          155          160
Ala Thr Tyr Glu Val Leu Met Ala Gln Leu Asp Arg Tyr Pro Glu Glu
          165          170          175
Leu Gln Asn Asp Met Ser Phe Leu Ala Asp Tyr Ser Ser Tyr Asn Lys
          180          185          190
Asn Val Asp Phe Ala Gly Arg Met Val Tyr Asp Asp Asn Gly Val Glu
          195          200          205
Val Phe Asn Phe Gly Lys Tyr Lys Gly Gln Ser Val Ser Glu Val Leu
          210          215          220
Lys Lys Asp Pro Gly Tyr Tyr Ser Trp Ile Leu Asn Ser Asp Phe Thr
225          230          235          240
Leu Asn Thr Lys Ala Met Leu Thr Lys Ile Arg Leu Arg Glu Leu Thr
          245          250          255
Gly Lys

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<210> 6849

<211> 368

<212> PRT

<213> B.fragilis

<400> 6849

Arg His Ser Trp Trp Asp Thr Ser Lys Ser Ile Lys Ile Gln Arg Asn
 1 5 10 15
 Lys Tyr Thr Ile Lys Pro Leu Leu Ser Met Pro Lys Val Leu Val Val
 20 25 30
 Ala Thr Ser Arg Lys Thr Lys Gly Ile Thr Ser Val Val Lys Ala
 35 40 45
 His Glu Thr Gly Glu Gln Trp Lys Lys Phe His Cys Lys Trp Ile Glu
 50 55 60
 Thr His Arg Asp Gly Asn Ser Val Arg Lys Leu Trp Tyr Leu Ala Thr
 65 70 75 80
 Ala Leu Ile Glu Tyr Ile Cys Leu Leu Pro Phe Tyr Asp Ile Val His
 85 90 95
 Ile His Val Gly Leu Arg Thr Ser Val Asn Arg Lys Leu Ile Phe Ala
 100 105 110
 Arg Ile Ala Leu Leu Phe Arg Lys Lys Ile Ile Val His Phe His Pro
 115 120 125
 Ala Thr Glu Lys His Leu Phe Asp Pro Met Phe Ser Gly Asn Ile Lys
 130 135 140
 His Leu Phe Glu Leu Ser Asn Lys Leu Leu Val Leu Ser Pro Lys Trp
 145 150 155 160
 Ile Glu Trp Ile Asn Glu Ala Tyr Arg Gly Asn Lys Tyr Asn Ile Gln
 165 170 175
 Val Leu Tyr Asn Pro Cys Pro Ser Val Lys Arg Ser Ile Gln Arg Glu
 180 185 190
 Asn Tyr Ile Leu Tyr Ala Gly Ile Leu Ser Asp Arg Lys Gly Tyr Asn
 195 200 205
 Arg Leu Ile Glu Ala Phe Ser Lys Ile Ala Ala Lys Tyr Pro Asp Trp
 210 215 220
 Lys Ile Lys Phe Ala Gly Asn Gly Glu Ile Glu Lys Gly Lys Ser Leu
 225 230 235 240
 Ala Val Lys Phe Gly Ile Glu Gln Gln Thr Glu Phe Leu Gly Trp Ile
 245 250 255
 Ala Gly Asn Thr Lys Glu Ser Ile Phe Gln His Ala Ser Ile Tyr Cys
 260 265 270
 Leu Pro Ser Trp Gly Glu Gly Phe Pro Met Gly Val Ile Asp Ala Ile
 275 280 285
 Ala Tyr Gly Ile Pro Val Ile Thr Thr Pro Val Gly Gly Leu Glu Lys
 290 295 300
 Val Phe His Asp Gly Ile Asp Ala Met Ile Tyr Glu Thr Tyr Asp Leu
 305 310 315 320
 Lys Met Leu Ala Asp Lys Leu Glu Gln Leu Ile Lys Ser Glu Thr Tyr
 325 330 335
 Arg Asn Ser Ile Val Asn Glu Ala Asp Lys Leu Val Cys Ser Asp Phe
 340 345 350
 Asn Ile Ile Thr Ile Cys Asn Lys Ile Glu Lys Ile Tyr Glu Asn Met
 355 360 365

<210> 6850

<211> 378

<212> PRT

<213> B.fragilis

<400> 6850

Cys His His Arg Ser Gln Cys Cys Cys Asn Lys Arg Arg Thr Lys Gln
 1 5 10 15
 Leu Tyr Ser Ser Gly Cys Thr Cys Lys Asn Tyr Lys Glu Asn Met Ile
 20 25 30
 Tyr Leu Ile Cys Gln Asp Trp Ser Asn Thr Ser Asn Asn His Ala Gly

35	40	45
Ile Lys Tyr Leu Cys Asn Gln Ile Gln Glu Met Tyr Pro Glu Ser Tyr		
50	55	60
Lys Thr Phe Val Ile Pro Ala Phe Trp Asn Asp Arg Ser Lys Ser Pro		
65	70	75
Ile Arg Ile Ile Ala Ser Leu Gln Tyr His Phe Ala Arg Tyr Lys His		
85	90	95
Arg Leu Tyr Thr Lys Lys Leu Tyr Asn His Ile Ile Ser Lys Leu Arg		
100	105	110
Lys Gly Asp Lys Ile Ile Leu Met Glu Tyr Met Glu Lys Phe Phe Pro		
115	120	125
Met Leu His Phe Ala Gln Lys Val Lys Arg Tyr Lys Phe Asn Ile Pro		
130	135	140
Leu Tyr Ala Met Val His Leu Val Pro Ser Arg Leu Glu Lys Gly Phe		
145	150	155
Ser Asp Lys Lys Thr Phe Asp Glu Trp Thr Ile Cys Ile Asp Lys Phe		
165	170	175
Leu Thr Leu Gly His Ser Leu Thr Gln Phe Leu Ile Thr Lys Gly Leu		
180	185	190
Pro Glu Asp Lys Val Val Thr Thr Phe His Tyr Val Asp Glu Tyr Tyr		
195	200	205
His Asn Lys Arg Pro Val Arg Leu His Lys Asn Ile Arg Val Ile Ala		
210	215	220
Met Gly Asn Gln Met Arg Asn Leu Lys Leu Lys Thr Ile Val Asp		
225	230	235
Asn Asn Pro Asn Val Asn Phe Thr Ile Cys Gln Gly Val Asn Asp Leu		
245	250	255
Ser Ser Tyr Phe Leu Lys Asn Thr Asn Val Glu Leu Ile Pro Phe Val		
260	265	270
Glu Glu Ser Glu Leu Arg Gln His Met Ala Asn Ala Asp Ile Ser Leu		
275	280	285
Asn Val Met Glu Asp Thr Val Gly Ser Asn Val Ile Val Thr Ser Leu		
290	295	300
Ala Met Gly Leu Ala Met Ile Cys Ser Asn Val Gly Ser Ile Lys Asp		
305	310	315
Tyr Cys Asp Asp Ser Asn Thr Ile Phe Cys Asn Asn Ser Asn Val Glu		
325	330	335
Asp Phe Ser Gln Ala Ile Thr Ala Leu Gln Thr Asp Arg Ile Arg Leu		
340	345	350
Asn Thr Met Gln Gln Ser Ala Ala Asn Met Gly Leu Gln Phe Thr Ile		
355	360	365
Glu Lys Phe Val Arg Gln Ile Ser Ala Leu		
370	375	

<210> 6851

<211> 298

<212> PRT

<213> B.fragilis

<400> 6851

Val Gly Asp Arg Met Glu Ser Thr Tyr Ile Glu Leu Lys Asp Ile Ala	
1	5
Gln Glu Ile Ser Asp Gln Gly Glu Gly Ile Glu Phe Asn Pro Leu Arg	
20	25
Leu Glu Glu Val Asn Asp Gly Leu Asn Leu Ile Tyr Ser Leu Glu Gln	
35	40
Lys His Arg Val Gln Thr Val Glu Glu Leu Ile Ala Leu Ser Glu Gln	
50	55
Tyr Ala Thr Arg Leu Ala Ala Ile Thr Ser Tyr Asp Asp Arg Ile Val	
	60

65		70		75		80									
Lys	Leu	Thr	Glu	Arg	Arg	Asp	Ala	Gln	Tyr	Asn	Lys	Val	Lys	Lys	Gln
				85					90					95	
Ala	Ala	Val	Leu	Thr	Lys	Ala	Arg	Thr	Glu	Ile	Ala	Arg	Glu	Val	Glu
			100					105					110		
Gln	Gln	Met	Ala	Ala	Arg	Leu	Ile	Pro	Leu	Gly	Ile	Pro	Asn	Val	Arg
		115					120					125			
Phe	Gln	Val	Glu	Met	Gly	Leu	Lys	Lys	Glu	Pro	Gly	Pro	Gln	Gly	Ala
		130				135					140				
Asp	Thr	Val	Asn	Phe	Leu	Phe	Ser	Ala	Asn	Lys	Asn	Gly	Thr	Leu	Gln
145					150					155					160
Ser	Val	Ser	Ser	Val	Ala	Ser	Gly	Gly	Glu	Ile	Ala	Arg	Val	Met	Leu
				165					170					175	
Ser	Ile	Lys	Ala	Met	Ile	Ala	Gly	Ala	Val	Lys	Leu	Pro	Thr	Ile	Val
			180					185					190		
Phe	Asp	Glu	Ile	Asp	Thr	Gly	Val	Ser	Gly	Glu	Ile	Ala	Asp	Arg	Met
		195				200						205			
Ala	Asp	Ile	Met	Gln	Glu	Met	Gly	Glu	Gln	Asn	Arg	Gln	Val	Ile	Ser
		210				215					220				
Ile	Thr	His	Leu	Pro	Gln	Ile	Ala	Ala	Arg	Gly	Arg	Ala	His	Tyr	Lys
225					230					235					240
Val	Tyr	Lys	Arg	Asp	Asn	Asp	Thr	Glu	Thr	Asn	Ser	His	Ile	Arg	Arg
				245					250					255	
Leu	Thr	Asp	Glu	Arg	Val	Glu	Glu	Leu	Ala	His	Met	Leu	Ser	Gly	
			260				265					270			
Ala	Thr	Leu	Thr	Glu	Ala	Ala	Leu	Ser	Asn	Ala	Arg	Ala	Leu	Leu	Glu
			275				280					285			
Pro	Ser	Leu	Lys	Glu	Arg	Lys	Ile	Ile	Lys						
		290				295									

<210> 6852

<211> 263

<212> PRT

<213> B.fragilis

<400> 6852

Phe	Met	Leu	Arg	Ser	Leu	Tyr	Ile	Gln	Asn	Tyr	Ala	Leu	Ile	Glu	Lys
1				5					10					15	
Leu	Asp	Ile	Arg	Phe	Glu	Thr	Gly	Phe	Ser	Val	Ile	Thr	Gly	Glu	Thr
			20					25					30		
Gly	Pro	Gly	Gln	Ser	Ile	Ile	Leu	Gly	Ala	Ile	Gly	Leu	Leu	Leu	Gly
			35				40					45			
Gln	Arg	Ala	Asp	Val	Lys	Ala	Ile	Arg	Gln	Gly	Ala	Ser	Lys	Cys	Val
			50			55					60				
Ile	Glu	Ala	Arg	Phe	Asp	Ile	Ser	Ala	Tyr	His	Met	Glu	Ala	Phe	Phe
65					70				75					80	
Glu	Glu	Asn	Glu	Leu	Glu	Tyr	Glu	Pro	Glu	Cys	Ile	Leu	Arg	Arg	Glu
				85				90					95		
Val	Gln	Ser	Ser	Gly	Lys	Ser	Arg	Ala	Phe	Ile	Asn	Asp	Thr	Pro	Ala
			100					105					110		
Ser	Leu	Thr	Gln	Met	Lys	Glu	Leu	Gly	Glu	Gln	Leu	Ile	Asp	Val	His
		115					120					125			
Ser	Gln	His	Gln	Asn	Leu	Leu	Asn	Lys	Glu	Gly	Phe	Gln	Leu	Asn	
		130				135					140				
Val	Leu	Asp	Ile	Leu	Ser	His	Asn	Glu	Glu	Ala	Leu	Asp	Val	Tyr	His
145					150					155					160
His	Leu	Tyr	Gln	Asp	Trp	Lys	Lys	Leu	Cys	Lys	Glu	Leu	Asp	Glu	Leu
				165					170					175	
Ile	Val	Leu	Ala	Glu	Gln	Ser	Lys	Thr	Asp	Glu	Asp	Tyr	Ile	Arg	Phe

	180		185		190										
Gln	Leu	Glu	Gln	Leu	Glu	Glu	Ala	His	Leu	Thr	Ala	Gly	Glu	Gln	Glu
	195				200							205			
Glu	Leu	Glu	Gln	Glu	Ala	Glu	Thr	Leu	Ala	His	Ala	Glu	Asp	Ile	Lys
	210				215							220			
Ala	Gly	Leu	Tyr	Arg	Val	Gly	Gln	Thr	Leu	Ala	Ser	Asp	Glu	Gly	Gly
225					230					235					240
Leu	Leu	Ala	Cys	Ile	Glu	Arg	Lys	Ser	Trp	Arg	Phe	Glu	Trp	Ala	Ala
			245						250					255	
Glu	Ser	Ile	Ser	Thr	Cys	Arg									
		260													

<210> 6853
 <211> 151
 <212> PRT
 <213> B.fragilis

	<400> 6853														
Ile	Val	Arg	Arg	Ser	Tyr	Asn	Phe	Leu	Gly	Ile	Ser	Asp	Glu	Tyr	Ser
1				5					10					15	
Pro	Val	Phe	Ser	Ser	Leu	Leu	Leu	Cys	Cys	Leu	Asn	Leu	Phe	Cys	Asn
			20					25					30		
Phe	Val	Leu	Cys	Lys	Asn	Ile	Lys	Phe	Lys	Ile	Thr	Asp	Tyr	Met	Lys
		35					40					45			
Phe	Ile	Val	Ser	Ser	Thr	Ala	Leu	Phe	Ser	His	Leu	Gln	Ala	Val	Ser
	50					55					60				
Arg	Val	Ile	Asn	Ser	Lys	Asn	Ala	Leu	Pro	Ile	Leu	Asp	Cys	Phe	Leu
65					70					75					80
Phe	Gln	Leu	Glu	Asp	Gly	Thr	Leu	Ser	Val	Thr	Val	Ser	Asp	Ser	Glu
				85					90					95	
Thr	Thr	Met	Val	Thr	Ser	Val	Glu	Val	Asn	Glu	Ser	Asp	Ser	Asn	Gly
			100						105					110	
Lys	Phe	Ala	Val	Ala	Ala	Lys	Thr	Leu	Leu	Asp	Ala	Leu	Lys	Glu	Ile
		115					120					125			
Pro	Glu	His	Pro	Leu	Thr	Leu	Ile	Ser	Lys	Pro	Asp	Thr	Tyr	Glu	Ile
	130					135						140			
Thr	Gly	Thr	Val	Pro	Glu	Trp									
145						150									

<210> 6854
 <211> 192
 <212> PRT
 <213> B.fragilis

	<400> 6854														
Ile	Met	Lys	Leu	Asn	Asn	Ile	Lys	Thr	Gly	Leu	Leu	Leu	Ala	Gly	Leu
1				5					10					15	
Leu	Leu	Leu	Phe	Gly	Asn	Val	Lys	Ala	Gln	Asp	Asn	Pro	Phe	Lys	Pro
			20					25					30		
Glu	Trp	Phe	Val	Ser	Gly	Gly	Ile	Asn	Gly	Ile	Thr	Ala	Leu	Asn	Gly
		35					40					45			
Ser	Ala	Asn	Asn	Ile	Leu	Gly	Gly	Lys	Val	Ser	Gly	Gly	Val	Trp	Leu
	50					55					60				
Asn	Lys	Ile	Ile	Gly	Leu	Arg	Val	Asp	Ala	Glu	Ala	Gly	Asn	Val	Trp
65					70					75					80
Leu	Lys	Gly	Gly	Tyr	Asn	Ala	Val	Thr	Val	Gly	Ala	Gly	Ala	Asp	Ile
				85					90					95	
Leu	Val	Asn	Leu	Met	Lys	Asn	Tyr	Thr	Asp	Glu	Asp	Arg	Lys	Phe	Arg
		100						105						110	

Leu Asn Ala Ile Phe Gly Leu Gly Tyr Asn Tyr Tyr Ser Phe Gly Asp
 115 120 125
 Asp Tyr Pro Arg Leu Ser Lys Thr Asn Thr Met Ser Gly Asn Phe Ser
 130 135 140
 Leu Gln Ala Ala Phe Arg Leu Asn Ser His Leu Ser Ile Phe Ala Glu
 145 150 155 160
 Pro Gly Ile Lys Ile Ser Thr Lys Phe Tyr Asp Ile Glu Asn Lys Asp
 165 170 175
 Asp Val Phe Ala Gly Gly Met Met Thr Val Gly Val Ile Tyr Lys Phe
 180 185 190

<210> 6855

<211> 228

<212> PRT

<213> B.fragilis

<400> 6855

Thr Gln Asn Ser Ile Lys Met Asn Val Thr Asp Asn Leu Lys Gln Val
 1 5 10 15
 Leu Ala Glu Leu Pro Ser Gly Val Arg Leu Val Ala Val Ser Lys Phe
 20 25 30
 His Pro Asn Glu Ala Ile Glu Glu Ala Tyr Arg Ala Gly Gln Arg Ile
 35 40 45
 Phe Gly Glu Ser Lys Val Gln Glu Met Thr Gly Lys Tyr Glu Ser Leu
 50 55 60
 Pro Lys Asp Ile Glu Trp His Phe Ile Gly His Leu Gln Thr Asn Lys
 65 70 75 80
 Ile Lys Tyr Met Ala Pro Tyr Val Ser Met Ile His Gly Ile Asp Ser
 85 90 95
 Tyr Lys Leu Leu Ala Glu Val Asn Lys Gln Ala Ile Lys Ala Glu Arg
 100 105 110
 Val Ile Arg Cys Leu Leu Gln Ile His Ile Ala Gln Glu Glu Thr Lys
 115 120 125
 Phe Gly Phe Ser Phe Asp Glu Cys Lys Glu Met Leu Asn Ala Ala Glu
 130 135 140
 Trp Lys Ala Leu Ala Asn Ile Gln Ile Cys Gly Leu Met Gly Met Ala
 145 150 155 160
 Thr Asn Thr Asp Ser Lys Glu Gln Ile Glu Arg Glu Phe Arg Ser Leu
 165 170 175
 Asn Cys Phe Phe His Glu Val Lys Lys Gln Tyr Phe Ala Asn Glu Pro
 180 185 190
 Thr Phe Cys Glu Leu Ser Met Gly Met Ser His Asp Tyr His Leu Ala
 195 200 205
 Ile Lys Glu Gly Ser Thr Leu Val Arg Val Gly Ser Lys Ile Phe Gly
 210 215 220
 Glu Arg Val Tyr
 225

<210> 6856

<211> 347

<212> PRT

<213> B.fragilis

<400> 6856

Gln Lys Ser Arg Asn Asn His Met Tyr Lys Ala Pro Pro Arg Asp Ile
 1 5 10 15
 Ser Ile Asp Ile Leu Lys Cys Ile Ala Ala Ile Met Ile Thr Asn Ser
 20 25 30
 His Met Asp Ile Leu Tyr Gly Asp Tyr Ser Tyr Leu Ala Thr Gly Gly

35	40	45
Ala Ile Gly Asp Ala Leu Phe Phe Phe Cys Ser Gly Tyr Thr Leu Phe		
50	55	60
Leu Gly Arg Asp Met Asp Phe Phe Asn Trp Tyr Lys Arg Arg Ile Asn		
65	70	75
Arg Ile Tyr Pro Thr Val Phe Thr Trp Ala Leu Ile Ala Ala Val Phe		
85	90	95
Phe Asp Gln Arg Tyr Asp Met Pro Glu Ile Leu Ile Lys Gly Gly Gly		
100	105	110
Trp Phe Val Ser Cys Ile Met Ile Tyr Tyr Val Val Leu Trp Phe Ile		
115	120	125
Arg Lys Phe Leu Lys Lys His Leu Lys Trp Val Phe Phe Met Ala Ala		
130	135	140
Thr Ile Thr Leu Leu Trp Tyr Phe Val Leu Gly Phe Gly Glu Lys Ser		
145	150	155
Gly Asn Asn Met Tyr Gly Trp Asn Tyr Phe Lys Trp Cys Tyr Tyr Phe		
165	170	175
Leu Phe Met Leu Leu Gly Ser Met Met Gly Leu Lys Arg Asn Leu Asn		
180	185	190
Lys Lys Thr Tyr Pro Phe Phe Glu Gly Leu Tyr Asp Lys His Ile His		
195	200	205
Ile Ile Pro Ile Phe Leu Lys Leu Leu Ile Cys Ile Val Leu Phe Phe		
210	215	220
Gly Leu Cys Trp Phe Lys Cys Gln Thr Gly Ile Gly Trp Glu Leu Leu		
225	230	235
Gln Ile Ser Ser Leu Ile Pro Leu Leu Gly Thr Thr Tyr Tyr Phe Trp		
245	250	255
Arg Leu Ser Asn Thr Lys Leu Leu Thr Gln Ala Tyr His His His Leu		
260	265	270
Thr Gly Pro Ile Ile Arg Phe Ile Ser Gly Leu Cys Leu Glu Ile Tyr		
275	280	285
Leu Val Gln Tyr Asn Leu Phe Thr Asp Lys Leu Asn Asn Ile Phe Pro		
290	295	300
Leu Asn Leu Leu Val Ile Phe Ser Thr Ile Leu Val Thr Ala Tyr Leu		
305	310	315
Leu Arg Cys Leu Ser Arg Ile Trp Ser Gln Thr Phe Lys Asp Gly Asp		
325	330	335
Tyr Asp Trp Arg Asp Val Thr Lys Leu Tyr Ser		
340	345	

<210> 6857

<211> 316

<212> PRT

<213> B.fragilis

<400> 6857

Cys Val Cys Gly Leu Phe Pro Gly Val Cys Phe Val Asp Glu Leu Arg	
1	15
Gly Leu Ile Gly Ser Gly Arg Val Thr Ser Pro Tyr Leu His Ile Gly	
20	30
Gly Gly Ser Asn Leu Leu Phe Thr Lys Asp Tyr Glu Gly Thr Ile Leu	
35	45
His Ser Arg Ile Gly Gly Val Glu Val Val Ala Glu Thr Asp Asp Asp	
50	60
Ile Val Val Arg Val Gly Ala Gly Val Val Trp Asp Asp Phe Val Asp	
65	80
Tyr Cys Val Gln Arg His Trp Tyr Gly Val Glu Asn Leu Ser Leu Ile	
85	95
Pro Gly Glu Val Gly Ala Ser Ala Val Gln Asn Ile Gly Ala Tyr Gly	

Val	Glu	Val	Lys	Asp	Leu	Ile	Val	Arg	Val	Glu	Thr	Leu	Asn	Ile	Glu
		115							120				125		
Gly	Lys	Glu	His	Val	Tyr	Asp	Val	Thr	Glu	Cys	Gly	Tyr	Ser	Tyr	Arg
		130				135					140				
Asp	Ser	Ile	Phe	Lys	Arg	Pro	Glu	Asn	Lys	Ser	Val	Phe	Val	Thr	Tyr
145					150					155					160
Val	Ser	Phe	Arg	Leu	Ser	Lys	Arg	Glu	His	Tyr	Thr	Leu	Asp	Tyr	Gly
				165						170					175
Thr	Ile	Arg	Arg	Glu	Leu	Glu	Lys	Tyr	Pro	Gly	Val	Thr	Leu	Asp	Val
			180						185					190	
Val	Arg	Arg	Val	Ile	Ile	Ala	Ile	Arg	Glu	Glu	Lys	Leu	Pro	Asp	Pro
		195						200				205			
Arg	Val	Met	Gly	Asn	Ala	Gly	Ser	Phe	Phe	Met	Asn	Pro	Ile	Val	Gly
	210					215					220				
Arg	Glu	Gln	Phe	Glu	Ala	Leu	Gln	Ala	Glu	Tyr	Pro	Gln	Met	Pro	Phe
225					230					235					240
Tyr	Glu	Ile	Asp	Thr	Asp	Arg	Val	Lys	Ile	Pro	Ala	Gly	Trp	Met	Ile
				245					250					255	
Asp	Leu	Cys	Gly	Trp	Lys	Gly	Lys	Ala	Leu	Gly	Pro	Ala	Ala	Val	His
		260						265					270		
Asp	Lys	Gln	Ala	Leu	Val	Leu	Val	Asn	Arg	Gly	Gly	Ala	Lys	Gly	Ala
	275						280					285			
Asp	Val	Ile	Ala	Leu	Ser	Asp	Ala	Val	Arg	Ala	Ser	Val	Arg	Ala	Lys
	290					295					300				
Phe	Gly	Ile	Asp	Ile	His	Pro	Glu	Val	Asn	Phe	Ile				
305					310					315					

<210> 6858

<211> 300

<212> PRT

<213> B.fragilis

<400> 6858

Ser	Arg	Phe	Met	Gln	Thr	Glu	Asn	Phe	Thr	Leu	Gly	Lys	Lys	Glu	Leu
1			5						10					15	
Leu	Ile	Leu	Leu	Gly	Leu	Thr	Leu	Val	Leu	Pro	Phe	Pro	Ile	Asn	Trp
		20						25					30		
Ala	Leu	Ile	Glu	Leu	Asn	Pro	Leu	Thr	Leu	Met	Ala	Gly	Ala	Asp	Asp
		35					40					45			
Val	Pro	Thr	Trp	Ile	Gly	Phe	Gly	Gly	Ser	Tyr	Ile	Gly	Gly	Ile	Ile
	50				55						60				
Gly	Gly	Ile	Ile	Ser	Ile	Met	Ile	Leu	Asn	Lys	Thr	Leu	Gln	Gln	Thr
65				70					75					80	
Gly	Val	Leu	His	His	Asp	Leu	Lys	Leu	Leu	Gln	Leu	Asp	Thr	Ile	Ile
			85						90					95	
Tyr	Thr	Gln	Gln	Gln	Asp	Trp	Phe	Thr	Gly	Phe	Lys	Gln	Glu	Leu	Ala
		100					105						110		
Glu	Asn	Leu	Lys	Ser	Ile	Asp	Leu	Tyr	Val	Leu	Asn	Thr	Val	Val	Ser
	115					120						125			
Ser	Ile	Ser	Met	Lys	Asn	Tyr	Ala	Tyr	Ala	Lys	Glu	Val	Leu	Thr	Glu
	130					135					140				
Ile	Asn	Lys	Gly	Leu	Glu	Tyr	Gln	Met	Val	Ala	Ala	Ser	Phe	Ser	Phe
145					150					155					160
Thr	Ser	Thr	His	Leu	Ser	Ser	Glu	Glu	Lys	Lys	Tyr	Met	Asn	Leu	Val
			165						170					175	
Arg	Arg	Val	Gln	Thr	Glu	Tyr	Ser	Ser	Phe	Ile	Lys	Asp	Ile	Leu	Tyr
		180						185					190		
Tyr	Ile	Pro	Leu	Ala	Glu	Thr	Ile	Ser	Ser	Arg	Lys	Lys	Leu	Asn	Tyr

195	200	205
Asp Gln Leu Met Asp Tyr Thr	Leu Ser Gln Tyr Asp Tyr Leu Gln Gly	
210	215	220
Gln Glu Gly Glu Ser Thr Ala	Ser Gly Ala Ile Ile Pro Arg Val Met	
225	230	235
Glu Ile Asp Pro Ser Asp Asp	Ile Arg Lys Glu Leu Glu Arg Ile Met	240
	245	250
Glu Glu Arg Leu Thr Gly Arg Thr	Tyr Leu Tyr His Leu Lys Ser Asp	255
	260	265
Leu Ala Glu Ala Thr His Gln	Leu Ile Ile Tyr Glu Glu Asn Arg Ile	270
	275	280
Asn Ser Ile Leu His Lys Pro	Glu Arg Glu Met Asn	285
290	295	300

<210> 6859
 <211> 133
 <212> PRT
 <213> B.fragilis

<400> 6859

Ile Leu Ile Ile Asn Glu Ser Asn Lys Met Lys Lys Val Ile Cys Ser	
1	15
Glu Lys Ala Pro Gly Ala Ile Gly Pro Tyr Ser Gln Ala Ile Glu Ala	
	30
Asn Gly Met Val Phe Val Ser Gly Gln Leu Pro Ile Asp Ala Ala Thr	
35	45
Gly Val Met Pro Asp Gly Val Glu Ala Gln Ala Arg Gln Ser Leu Glu	
50	60
Asn Ile Lys His Ile Leu Glu Ala Ala Gly Leu Thr Met Ala Asp Ile	
65	80
Val Lys Thr Thr Val Phe Leu Gln Asp Met Ser Leu Phe Ala Gly Met	
	95
Asn Gly Val Tyr Ala Thr Tyr Phe Asp Gly Ala Phe Pro Ala Arg Ser	
	110
Ala Val Ala Val Lys Ala Leu Pro Lys Asp Ala Leu Val Glu Ile Glu	
115	125
Cys Ile Ala Ala Arg	
130	

<210> 6860
 <211> 294
 <212> PRT
 <213> B.fragilis

<400> 6860

Lys Thr Ile Ile Met Ala Val Asp Lys Thr Pro Ser Gln Val Ala Thr	
1	15
Ser Ala Leu Gln Ala Ile Pro Phe Gly Ser Ile Ile Gly Gly Pro Leu	
	30
Lys Ala Cys Val Glu Ala Gln Ala Leu Ala Ala Lys Thr Thr Trp Glu	
35	45
Phe Ile Gln Asn Val Gly Ile Asn Val Asn Pro Glu Thr Gly Glu Lys	
50	60
Thr Ala Val Asn Val Ser Phe Ser Phe Ile Gln Gly Gly Arg Leu Val	
65	80
Gln Leu Asn Ile Pro Leu Leu Thr Ile Val Pro Ile Pro Tyr Ile Ala	
	95
Ile Arg Glu Val Asp Ile Asn Phe Lys Ala Asn Ile Ser Ala Ser Ser	
100	110

Ser Thr Thr Ala Glu Thr Asn Glu Ser Val Ser Lys Asp Ala Ala Leu
 115 120 125
 Lys Ala Ser Ala Ser Met Arg Phe Gly Cys Phe Lys Met Asn Ala Asp
 130 135 140
 Met Asn Ala Ser Tyr Ser Ser Lys Lys Asp Ser Lys Ala Thr Ser Asp
 145 150 155 160
 Ser Lys Tyr Ser Val Glu Tyr Thr Met Asp Val Ala Val Lys Ala Gly
 165 170 175
 Gln Asp Ser Met Pro Ala Gly Leu Ser Lys Ile Leu Glu Leu Leu Gly
 180 185 190
 Asn Ser Leu Asp Val Ser Asp Pro Ala Gly Thr Leu Glu Val Asn Ser
 195 200 205
 Asn Leu Leu Leu Ile Glu Asn Gly Lys Glu Thr Val Arg Leu Ile Ala
 210 215 220
 Thr Tyr Lys Asp Gly Ser Gly Leu Leu Ala Pro Asp Lys Leu Thr Ile
 225 230 235 240
 Thr Gly Thr Gly Ala Asn Ala Ala Asp Phe Lys Val Ser Gly Asp Ser
 245 250 255
 Lys Ile Ile Asp Leu Pro Glu Gly Thr Tyr Thr Ile Lys Ala Glu Gly
 260 265 270
 Ser Lys Lys Glu Val Ile Val Glu Val Lys Lys Asp Thr Ala Thr Pro
 275 280 285
 Gln Glu Glu Val Thr Glu
 290

<210> 6861
 <211> 88
 <212> PRT
 <213> B.fragilis

<400> 6861
 Phe Asn Tyr Met Glu Asn Leu Glu Thr Ala Leu Leu Leu Met Val Val
 1 5 10 15
 Gly Met Ala Thr Val Phe Ala Ile Leu Leu Ile Val Ile Tyr Leu Gly
 20 25 30
 Lys Leu Leu Ile Ser Leu Val Asn Lys Tyr Ala Pro Glu Glu Gln Leu
 35 40 45
 Pro Ala Lys Gln Gly Thr Gln Ser Pro Val Pro Ile Pro Gly Asn Ile
 50 55 60
 Val Ala Thr Ile Thr Ala Ala Val Asn Val Val Thr Gln Gly Lys Gly
 65 70 75 80
 Lys Val Ala Lys Ile Glu Lys Ile
 85

<210> 6862
 <211> 392
 <212> PRT
 <213> B.fragilis

<400> 6862
 Gln Lys Asn Ile Gln Met Lys Ile Gly Ile Ile Thr Ile Cys Lys Val
 1 5 10 15
 Asn Asn Tyr Gly Ala Glu Leu Gln Ala Phe Ala Thr Gln Lys Lys Leu
 20 25 30
 Glu Gln Met Gly His Asn Ala Glu Ile Ile Asn Tyr Leu Tyr Tyr Lys
 35 40 45
 Asp Trp His Phe Lys Asp Thr Pro Leu Ser Gln Pro Phe Val Pro Leu
 50 55 60
 Asp Met Lys Gly Lys Leu Ser Tyr Trp Ile Lys Tyr Arg Leu Met Ser

65	70	75	80
Trp Val Val Asn Lys Val Leu Pro Ile Phe Asn Gly Asn Met Arg Arg			
	85	90	95
Arg Leu His Asn Tyr Gln Ser Phe Ile Asp Ser Glu Arg Phe Ser Ala			
	100	105	110
Gln Tyr Lys Ser Met Asp Glu Leu Tyr Lys Thr Tyr Pro Lys Tyr Asp			
	115	120	125
Ile Tyr Met Val Gly Ser Asp Gln Val Trp Asn Pro Ser Ala Ser Ser			
	130	135	140
Ser Ile Glu Pro Tyr Phe Leu Thr Phe Ala Pro Lys Asn Ala Pro Lys			
145	150	155	160
Val Thr Tyr Ala Ser Ser Phe Gly Val Ala Ser Ile Ala Pro Asn Leu			
	165	170	175
Ser Lys Arg Tyr Ala Lys Leu Leu Asn Asn Leu Asp Thr Ile Ala Val			
	180	185	190
Arg Glu Gln Ser Gly Val Glu Leu Val Lys Gln Leu Thr Gly Arg Glu			
	195	200	205
Ala Lys Leu Val Val Asp Pro Thr Leu Leu Leu Ser Lys Ala Asp Trp			
	210	215	220
Glu Pro Tyr Met Lys Pro Leu Ala Lys Ile Ser Thr Gln Tyr Ile Leu			
225	230	235	240
Ile Tyr Gln Leu Phe Pro Ser Gln Thr Val Ile Asp Val Ala Leu Lys			
	245	250	255
Ile Gly Lys Glu Lys Asn Leu Pro Val Tyr Asn Ile Cys Lys Arg Ala			
	260	265	270
Tyr Gly Met Lys Lys Ile Val Gly Ile Asn Asn Ile Leu Asp Ala Gly			
	275	280	285
Pro Ser Glu Phe Leu Trp Leu Ile Ala Asn Ala Thr Cys Met Val Thr			
	290	295	300
Asn Ser Phe His Gly Thr Ala Phe Ser Val Asn Phe Ala Thr Pro Phe			
305	310	315	320
Cys Cys Val Leu Asn Arg Lys Arg Lys Asn Asn Gly Arg Met Ile Ser			
	325	330	335
Phe Leu Asp Lys Val Asp Met Ser Asn Arg Ile Leu Tyr Glu Asp Ser			
	340	345	350
Ile Ala Glu Leu Asn Val Met Thr Ala Cys Ser Glu Val Thr Asn Asn			
	355	360	365
His Leu Arg Leu Leu Val Asn Asn Ser Ile Asp Tyr Leu Lys Ser Ile			
	370	375	380
Ile Glu Asn Lys Glu Gln Lys Cys			
385	390		

<210> 6863

<211> 191

<212> PRT

<213> B.fragilis

<400> 6863

His Lys Asn Ile Met Ile Gln Ser Lys Lys Asp Leu Lys Tyr Tyr Leu			
1	5	10	15
Ser Glu Asp Leu Lys Arg Phe Asn Asn His Lys Pro Asn Ile Lys Asp			
	20	25	30
Trp Leu Leu His Asn Glu Ile Trp Tyr Ile Phe His Tyr Ile Arg His			
	35	40	45
Leu Arg Tyr Val Glu Tyr Tyr Lys Asn Thr Asn Lys Asn Lys Ile Leu			
	50	55	60
Phe Phe Tyr His Phe Phe Arg Tyr Lys Arg Leu Gly Phe Lys Leu Lys			
65	70	75	80
Ile Thr Ile Tyr Pro Asn Thr Ile Gly Ala Gly Leu Arg Ile Tyr His			

				85					90					95			
Val	Gly	Asp	Phe	Ile	His	Ile	Gly	Ala	Gln	Cys	His	Ile	Gly	His	Asn		
			100					105					110				
Cys	Thr	Leu	Leu	Pro	Gly	Val	Val	Phe	Gly	Asn	Lys	Tyr	Glu	Lys	Ala		
		115					120					125					
Thr	Asp	Thr	Gln	Ile	Ile	Ala	Gly	Asn	Asn	Cys	Tyr	Phe	Gly	Leu	Gly		
	130				135					140							
Ala	Lys	Ile	Phe	Gly	Ser	Ile	Ile	Ile	Gly	Asn	Asn	Val	Thr	Ile	Gly		
145					150					155					160		
Ala	Asn	Ala	Val	Val	Thr	Lys	Asp	Ile	Pro	Asp	Asn	Ala	Ile	Val	Gly		
			165						170					175			
Gly	Ile	Pro	Ala	Lys	Val	Leu	Arg	Phe	Lys	Glu	Ile	Asn	Ile	Leu			
			180					185					190				

<210> 6864

<211> 194

<212> PRT

<213> B.fragilis

<400> 6864

Arg	Arg	Cys	Ile	Arg	Ile	Lys	Arg	Ile	Thr	Asn	Met	Lys	Lys	Ile	Lys		
1			5					10					15				
Thr	Ala	Phe	Ala	Leu	Pro	Leu	Phe	Trp	Leu	Leu	Phe	Lys	Val	Ser	Lys		
		20						25				30					
Asp	Met	His	Lys	Ile	Gln	Val	Asp	Gly	Gln	Ala	Trp	Cys	Gln	Trp	Gln		
		35				40						45					
His	Lys	Asn	Phe	Thr	Leu	Trp	Asn	Met	Cys	Ser	Leu	Phe	Ile	Gly	Phe		
	50					55					60						
Lys	Glu	Phe	Arg	Asn	Leu	Phe	Tyr	Tyr	Arg	Ile	Gly	Tyr	Leu	His	His		
65					70				75					80			
Leu	Ile	Glu	Trp	Ile	Phe	Pro	Arg	Met	Thr	Asn	Leu	Tyr	Ile	Thr	Thr		
				85				90					95				
Pro	Arg	Ser	Asp	Val	Asp	Ser	Gly	Leu	Ile	Ile	Gln	His	Gly	Phe	Ala		
		100					105						110				
Thr	Ile	Ile	Ser	Ala	Lys	Gln	Ile	Gly	Lys	Asn	Cys	Lys	Ile	Tyr	Gln		
	115					120						125					
Gln	Val	Thr	Ile	Gly	Tyr	Asp	His	Thr	Leu	Gln	Ala	Pro	Ile	Ile	Gly		
	130					135					140						
Asp	Asn	Val	Glu	Ile	Cys	Cys	Gly	Ala	Lys	Val	Ile	Gly	Gly	Val	Thr		
145					150					155					160		
Ile	Gly	Asn	Asn	Val	Ile	Ile	Gly	Ala	Asn	Ala	Val	Val	Ile	Lys	Asp		
			165					170						175			
Val	Pro	Asn	Asn	Cys	Ile	Val	Ala	Gly	Val	Pro	Ala	Lys	Ile	Ile	Lys		
			180					185					190				

Lys Ile

<210> 6865

<211> 536

<212> PRT

<213> B.fragilis

<400> 6865

Thr	Cys	Ile	Met	Ile	Lys	Leu	Asn	Glu	Asn	Ile	Ile	Arg	Trp	Ile	Ile		
1				5				10					15				
Ala	Val	Pro	Cys	Ile	Leu	Leu	Thr	Val	Cys	Leu	Val	Leu	Tyr	Arg	Ala		
		20						25				30					
Tyr	Arg	His	Ser	Ala	Ser	Asp	Arg	Glu	Arg	Leu	Ala	Leu	Ser	Leu	Glu		
		35					40					45					

Glu	Phe	Arg	Asp	Lys	Glu	Lys	Lys	Ser	Val	Leu	Ile	Gln	Arg	Val	Ser
50					55					60					
Gln	Gln	Met	Glu	Glu	Ile	Ala	Tyr	Gln	Gln	Lys	Asp	Ile	Ser	Glu	Lys
65					70					75					80
Arg	Arg	Gln	Glu	Ala	Val	Ala	Gln	Thr	Gln	Lys	Ala	Asn	Arg	Met	Gln
				85					90					95	
Gln	Gln	Ala	Glu	Leu	Ala	Arg	Glu	Arg	Ala	Leu	Ala	Ala	Gln	Leu	Glu
			100					105					110		
Ala	Glu	Lys	Ala	Tyr	Arg	Met	Ala	Asp	Glu	Gln	Lys	Asn	Leu	Ala	Met
		115					120					125			
Glu	Arg	Gln	Leu	Gln	Ala	Glu	Gln	Ser	Lys	Arg	Val	Ala	Asp	Thr	Leu
130						135					140				
Ala	Phe	Leu	Ala	Leu	Gly	Arg	Ser	Leu	Gly	Thr	Leu	Ser	Val	Thr	Gln
145					150					155					160
Tyr	Arg	Ser	Gly	Asn	Met	Glu	Leu	Ala	Ser	Leu	Leu	Ala	Tyr	Thr	Ala
				165					170					175	
Trp	Trp	Phe	Thr	Lys	Arg	Tyr	Asp	Gly	Asp	Val	Tyr	His	Pro	Ala	Val
			180					185					190		
Phe	Asn	Ala	Leu	Ser	Leu	Ser	Cys	Arg	Gln	Asp	Gln	Leu	Trp	Phe	Gly
	195						200					205			
His	Lys	Gly	Ala	Val	Thr	Gly	Ile	Lys	Leu	Leu	Ser	Glu	Gly	Glu	Glu
210						215					220				
Lys	Ala	Arg	Ala	Gly	Arg	Asn	Pro	Leu	Pro	Gly	Leu	Val	Thr	Val	Gly
225					230					235					240
Lys	Tyr	Gly	Glu	Met	Ile	Arg	Trp	Lys	Ser	Glu	Asn	Gly	Gln	Thr	Tyr
				245					250					255	
Thr	Ser	Glu	Leu	Leu	Leu	Asn	Asp	Pro	Cys	Tyr	Asp	Phe	Arg	Asp	Val
			260					265					270		
Leu	Leu	Arg	Ser	Asp	Ser	Gln	Met	Tyr	Ala	Leu	Ser	Tyr	Cys	Gly	Gln
		275					280					285			
Leu	Ile	Ser	Thr	Asp	Ser	Ala	Gly	Ile	Val	Thr	Arg	Phe	Leu	Pro	Lys
290						295					300				
Gly	Glu	Tyr	Arg	Gln	Leu	Ile	Ser	Ile	Ala	Ser	Asn	Leu	Val	Leu	Ala
305					310					315					320
Val	Ser	Thr	Thr	Gly	Ile	Tyr	Ser	Phe	Asp	Cys	Val	Asn	His	Glu	Ile
				325					330					335	
Gln	Pro	Tyr	Phe	Gln	Pro	Glu	His	Ser	Ile	Thr	Cys	Val	Gly	Gln	Met
		340						345					350		
Glu	Gly	Tyr	Leu	Tyr	Val	Phe	Phe	Lys	Asn	Gly	Thr	Val	Ala	Leu	Leu
		355					360				365				
Ser	Ser	Asp	Gly	Thr	Phe	Leu	Arg	Phe	Ile	Asp	Ser	Leu	Pro	Glu	Asn
370						375					380				
Ser	Val	Val	Thr	Ala	Phe	Cys	Pro	Leu	Thr	Asn	Glu	Arg	Tyr	Ala	Ile
385					390					395					400
Gly	Cys	Arg	Glu	Gly	Val	Ile	Leu	Ile	Cys	Asp	Lys	Asn	Gly	Asn	Ile
				405					410					415	
Arg	Gln	Lys	Leu	Ile	Gly	His	Gln	Ala	Ala	Val	Thr	Ala	Ile	Ser	Arg
			420					425					430		
Lys	Gly	Asn	Lys	Leu	Phe	Ser	Ser	Ser	Tyr	Asp	Cys	Thr	Leu	Arg	Leu
		435					440					445			
Trp	Asp	Leu	Arg	Lys	Gly	Lys	Thr	Glu	Ser	Ala	Val	Ile	Val	Thr	Ser
450						455					460				
Pro	Gly	Trp	Ile	His	Thr	Phe	Cys	Phe	His	Pro	Asp	Gly	Thr	Ser	Val
465					470					475					480
Phe	Ile	Gly	Asp	Glu	Gln	Gly	Arg	Leu	Tyr	Arg	Val	Pro	Val	Ser	Pro
				485					490					495	
Asp	His	Met	Ala	Thr	Val	Val	Arg	Gln	Gly	Leu	Gln	Arg	Asp	Phe	Thr
		500						505					510		
Arg	Glu	Glu	Trp	Glu	Tyr	Tyr	Ile	Gly	Lys	Gln	Ile	Pro	Phe	Glu	Ser

515 520 525
 Tyr Tyr Leu Lys Thr Tyr Gln Pro
 530 535

<210> 6866
 <211> 225
 <212> PRT
 <213> B.fragilis

<400> 6866

Leu Phe Leu Ile Asn Gly Lys Val Leu Met Arg Phe Ile Leu Phe Ile
 1 5 10 15
 Ile Phe Ser Leu Cys Leu Pro Leu Val Met Gln Gly Gln Glu Gln Asn
 20 25 30
 Val Trp Thr Gln Asn Asp Ser Leu Lys Leu Lys Lys Ile Leu Val Gly
 35 40 45
 Gln Ala Glu Ile Arg Ile Asn Arg Glu Ala Leu Arg Glu Leu Asp Arg
 50 55 60
 Ala Phe Ser Ser Pro Arg Arg Leu Phe Lys Ser Gln Ser Arg Ser Ala
 65 70 75 80
 Ile Leu Leu Ile Lys Asp Phe Leu Leu Tyr Arg Pro Asn Val Phe Thr
 85 90 95
 Gly Lys Tyr His Ile Ser Thr Phe Lys Val Asn Glu Leu Asn Ile Arg
 100 105 110
 Gln Asp Ser Leu Phe Met Asn Val His Met Leu Gly Asn Lys Gln Leu
 115 120 125
 Phe Val Lys Ser Gln Leu Asp Ile Gly Asp Pro Arg Val Leu Ile Lys
 130 135 140
 Arg Lys Thr Asp Ile Gln Phe Lys Phe Thr Asp His Leu Ala Tyr Arg
 145 150 155 160
 Val Tyr Gly Gly Tyr Thr Ile Asp Lys Asn Arg Thr Ile Ile Leu Pro
 165 170 175
 Thr Thr Ala Thr Pro Tyr Tyr Val Gly Thr Gly Phe Ser Tyr Ser Leu
 180 185 190
 Asn Lys Lys Leu Gln Leu Lys Thr Gly Ile Glu Tyr Gln Tyr Asn Val
 195 200 205
 Ile Tyr Lys Arg Trp Glu Trp Val Trp Asn Ser Gly Ile Arg Phe Asn
 210 215 220
 Phe
 225

<210> 6867
 <211> 813
 <212> PRT
 <213> B.fragilis

<400> 6867

Ile Lys Leu Ile Met Lys Thr Asn Ile Gln Glu Asn Leu Ser Arg Ser
 1 5 10 15
 Leu Ser Thr Trp Gly Asp Lys Pro Ala Val Val Ala Lys Asp Gly Thr
 20 25 30
 Val Ser Tyr Gln Met Leu Glu Arg Tyr Ser Ala Asn Ile Ala Gln Ser
 35 40 45
 Ile Arg Gln Arg Leu Ser Val Thr Asp Pro Ser Gly Leu Arg Asn Ile
 50 55 60
 Cys Ile Gly Val Cys Met Glu Arg Asn Lys Thr Leu Val Pro Ala Ile
 65 70 75 80
 Leu Ala Ile Phe Arg Leu Gly Ala Thr Tyr Leu Pro Ile Asp Pro Ser
 85 90 95

Leu Pro Asp Asn Arg Lys Arg Tyr Met Ala Glu Asn Ala Asp Met Val
 100 105 110
 Leu Leu Leu Thr Asp Ser Ser Asn Glu Val Gly Gly Ile Pro Ser Val
 115 120 125
 Arg Gln Leu Tyr Leu Asn Gly Glu Gln Leu Ser Glu Pro Val Val Gly
 130 135 140
 Asp Tyr Thr Glu Val Leu Pro Asp Asp Cys Ala Tyr Ile Ile Tyr Thr
 145 150 155 160
 Ser Gly Thr Thr Gly Asn Pro Lys Gly Val Arg Ile Ser Tyr Arg Asn
 165 170 175
 Leu Asp Thr Phe Thr Arg Asn Leu Ile Asp Lys Lys Leu Tyr His Leu
 180 185 190
 Ser Asp Pro Ala Asn Arg Tyr Leu Ala Phe Ala Ser Ile Ser Phe Asp
 195 200 205
 Ala Ser Ile Leu Glu Leu Met Met Cys Ile Pro Ala Gly Gly Thr Leu
 210 215 220
 Ile Leu Ala Gly Glu Asp Glu Arg Arg Asp Ile Ser Leu Leu Asp Glu
 225 230 235 240
 Leu Ile Arg Arg Glu Lys Val Asn Ile Ala Phe Phe Pro Pro Ser Leu
 245 250 255
 Leu Gly Met Phe Ala Asp Leu Asp Phe Pro Ser Phe Lys Thr Leu Leu
 260 265 270
 Phe Gly Ala Glu Ala Ile Gly Glu Lys Leu Phe Asn Arg Leu Lys Gln
 275 280 285
 Gln Pro Tyr Arg Leu Met Asn Val Tyr Gly Pro Thr Glu Asn Thr Val
 290 295 300
 Leu Ser Thr Ile Arg Ile Val Gly Lys Asp Thr Ser Tyr Asp Asp Ile
 305 310 315 320
 Gly Tyr Pro Leu Lys Gly Thr Val Cys Tyr Val Leu Ser Glu Asn Leu
 325 330 335
 Gln Gln Thr Thr Leu Gly Ala Thr Gly Glu Leu Cys Leu Gly Gly Pro
 340 345 350
 Gln Val Ser Leu Gly Tyr Ile Gly Ser Val Gln Leu Asn Glu Lys Ser
 355 360 365
 Phe Ile Ser Tyr Asp Gly Glu Arg Leu Tyr Arg Thr Gly Asp Leu Val
 370 375 380
 Gln Gln Gln Pro Asp Gly Ser Ile Arg Phe Ile Gly Arg Lys Asp Thr
 385 390 395 400
 Gln Val Lys Ile Arg Gly Phe Arg Ile Glu Leu Thr Glu Ile Ala Glu
 405 410 415
 Arg Leu Asn Arg Asp Pro Asp Val Glu Arg Ala His Val Val Val
 420 425 430
 Glu Arg Asn Gly Arg Gln Leu Leu Gly Ala Tyr Leu Gln Pro Ser Val
 435 440 445
 Ser Gly Asn Phe His Pro Glu Glu Val Lys Glu Arg Leu Arg Ala Glu
 450 455 460
 Leu Pro Tyr Tyr Met Ile Pro Asn Leu Trp Gln Val Val Asp His Phe
 465 470 475 480
 Gln Arg Thr Ile Asn Asp Lys Ile Asp Val Arg Val Leu Pro Ala Phe
 485 490 495
 Thr Ser Leu Glu Leu Lys Tyr Val Pro Pro Val His Pro Gly Glu Val
 500 505 510
 Ile Leu Cys Gly Ile Leu Lys Glu Met Leu Gly Leu Pro Gln Val Ser
 515 520 525
 Val Glu Ala Asp Leu Ile Asp Leu Gly Leu Thr Ser Leu Asp Met
 530 535 540
 Leu Arg Leu Val Thr Glu Ala Asn Lys Lys Gly Cys Pro Ile Asn Val
 545 550 555 560
 Ser Ala Val Tyr Thr Ala Arg Asn Leu Arg Arg Leu Leu Leu Val Pro

[illegible]

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	

2000

2000

				165					170					175					
Phe	Gly	Gly	Leu	Ser	Tyr	Thr	Pro	Ser	Phe	Cys	Lys	Pro	Leu	Ser	Ile				
			180						185				190						
Met	Ala	Glu	Tyr	Asp	Ser	Asp	Gly	Phe	Asn	Val	Gly	Ala	Ala	Ala	Lys				
		195					200					205							
Leu	Trp	Lys	His	Leu	Ser	Leu	Asn	Val	Phe	Thr	Arg	Glu	Phe	Lys	Cys				
	210					215					220								
Ile	Ser	Gly	Gly	Ile	Arg	Tyr	Glu	Cys	Val	Leu	Ile	His							
225					230					235									

<210> 6869
 <211> 206
 <212> PRT
 <213> B.fragilis

Gly	Ser	Thr	Ile	Lys	Glu	Lys	Lys	Lys	Gln	Gly	Asn	Ile	Arg	Arg	Ile				
1				5					10				15						
Ser	Leu	Lys	Asn	Cys	Asn	Phe	Ala	Ala	Gln	Phe	Lys	Ile	Ile	Ala	Met				
			20					25					30						
Glu	Phe	Thr	Gly	Lys	Ile	Ile	Ala	Ile	Leu	Gln	Pro	Arg	Gly	Gly	Val				
		35					40					45							
Ser	Lys	Thr	Ser	Gly	Asn	Glu	Trp	Lys	Ala	Gln	Glu	Tyr	Val	Ile	Glu				
	50					55					60								
Asn	His	Asp	Gln	Tyr	Pro	Lys	Lys	Met	Cys	Phe	Asp	Ile	Phe	Gly	Ala				
65					70					75					80				
Asp	Lys	Ile	Glu	Gln	Phe	Asn	Ile	Gln	Met	Gly	Glu	Glu	Leu	Thr	Val				
				85					90					95					
Ser	Phe	Asp	Ile	Glu	Ala	Arg	Gln	Trp	Gln	Asp	Arg	Trp	Phe	Asn	Ser				
			100					105					110						
Ile	Arg	Ala	Trp	Lys	Val	Glu	Arg	Val	Gly	Ala	Gly	Ala	Pro	Met	Gly				
		115						120				125							
Ser	Gly	Ser	Ser	Gly	Ser	Ser	Ser	Gly	Thr	Leu	Phe	Gly	His	Pro	Asn				
	130					135						140							
Leu	Leu	Pro	Val	Thr	Gln	Lys	Thr	Ile	Cys	Leu	Ser	Lys	Gln	Thr	Ser				
145					150					155					160				
Phe	Gly	Lys	Arg	His	Lys	Thr	Pro	Lys	Val	Leu	Gln	Asp	Leu	Ser	Gly				
				165					170					175					
Phe	Tyr	Thr	Phe	Tyr	Gly	Val	Arg	Lys	Cys	His	Gln	Thr	His	Leu	Cys				
			180					185					190						
Lys	Ser	Ile	Pro	His	Trp	Asp	Ile	Gln	Phe	Arg	Pro	Tyr	Lys						
		195					200					205							

<210> 6870
 <211> 409
 <212> PRT
 <213> B.fragilis

Arg	Thr	Lys	Met	Leu	Ser	Ile	Leu	Ile	Asn	Ala	Tyr	Ala	Cys	Ser	Pro				
1				5					10					15					
Asn	Met	Gly	Ser	Glu	Pro	Gly	Met	Ala	Trp	Asn	Trp	Cys	Ile	Asn	Leu				
			20					25					30						
Ala	Arg	His	Cys	Glu	Leu	Tyr	Ile	Thr	Glu	Gly	Glu	Phe	Arg	Asp					
		35					40				45								
Lys	Ile	Glu	Ala	Val	Leu	Pro	Thr	Leu	Pro	Gln	Gly	Lys	His	Met	His				
	50					55					60								
Phe	Tyr	Tyr	Asn	Pro	Val	Ser	Glu	Glu	Val	Arg	Lys	Met	Cys	Trp	Asn				
65					70					75					80				

Gln Gly Asp Trp Arg Phe Tyr Lys His Tyr Lys Lys Trp Gln Trp Lys
 85 90 95
 Thr Tyr Glu Met Ala Gln Glu Ile Ile Val Lys Gln His Ile Asp Ile
 100 105 110
 Val His Gln Leu Asn Met Ile Gly Phe Arg Glu Pro Gly Tyr Leu Trp
 115 120 125
 Lys Leu Asp Lys Pro Phe Val Trp Gly Pro Val Asp Ala Lys Glu Lys
 130 135 140
 Phe Pro Thr Ala Tyr Leu Arg Asp Ala Gly Ile Lys Ala Asn Leu Phe
 145 150 155 160
 Ile Arg Leu Lys Asn His Ile Thr Gly Leu Gln Leu Arg Tyr Ser Gln
 165 170 175
 Arg Val Lys Lys Ala Val Lys Lys Ala Ser Val Val Thr Ser Ala Ser
 180 185 190
 Ser Glu Ser Gln Lys Ser Phe Lys Lys Tyr Phe His Ile Asp Ala Pro
 195 200 205
 Leu Leu Asn Glu Thr Gly Cys Tyr Pro Lys Thr Thr Ile Ile Asn Ser
 210 215 220
 Thr Lys Glu Lys Gly Asp Leu Asn Leu Leu Trp Val Gly Lys Leu Asp
 225 230 235 240
 Phe Arg Lys Gln Leu Pro Leu Ala Ile Lys Ala Ile Ala Arg Leu Ala
 245 250 255
 Asn Pro His Ile Lys Leu His Ile Val Gly Gly Asn Asn Asn Ser Tyr
 260 265 270
 Gln Lys Leu Ala Met Glu Leu Asn Ile Ser His Gln Cys Ile Trp His
 275 280 285
 Gly Val Ile Ser His Asn Glu Val Gln Glu Leu Met Gln Lys Val Asp
 290 295 300
 Ile Phe Phe Phe Thr Ser Ile Ala Glu Gly Thr Pro His Val Val Leu
 305 310 315 320
 Glu Ala Ile Asn Asn Asn Leu Pro Val Ile Cys Phe Asp Ile Cys Gly
 325 330 335
 His Gly Asp Ser Ile Asn Glu Gln Val Gly Ile Lys Ile Pro Leu Ser
 340 345 350
 Thr Pro Gln Gln Ser Ile Asn Asp Phe Ala Glu Lys Ile Thr Tyr Leu
 355 360 365
 Phe Asn His Arg Asp Val Leu Lys Gln Met Ser Glu Asn Cys Arg Val
 370 375 380
 Arg Gln Glu Glu Leu Ser Trp Asp Asn Lys Ala Lys Gln Met Val Ser
 385 390 395 400
 Leu Tyr Lys Lys Val Leu Ser Gln Glu
 405

<210> 6871

<211> 255

<212> PRT

<213> B.fragilis

<400> 6871

Leu Lys Glu Met Lys Ile Arg Ile Leu Gly Ser Gly Thr Ser Thr Gly
 1 5 10 15
 Val Pro Glu Ile Gly Cys Thr Cys Ala Val Cys Thr Ser Lys Asp Pro
 20 25 30
 Arg Asp Cys Arg Leu Arg Thr Ser Ala Leu Val Tyr Thr Asp Asp Thr
 35 40 45
 Thr Ile Leu Leu Asp Cys Gly Pro Asp Phe Arg Glu Gln Met Leu Arg
 50 55 60
 Val Pro Phe Gly Lys Ile Asp Ala Val Leu Ile Ser His Glu His Tyr
 65 70 75 80

[illegible]

<400> 6872

Ser	Tyr	Arg	Ile	Ile	Pro	Lys	Thr	Glu	Met	Lys	Arg	Glu	Val	Lys	Phe
1				5					10					15	
Ser	Leu	Val	Phe	Arg	Asp	Met	Trp	Gln	Ser	Ala	Gly	Lys	Tyr	Val	Pro
			20					25					30		
Arg	Val	Asp	Gln	Leu	Val	Lys	Val	Ala	Pro	Ala	Ile	Val	Glu	Met	Gly
		35					40					45			
Cys	Phe	Ala	Arg	Val	Glu	Thr	Asn	Gly	Gly	Gly	Phe	Glu	Gln	Val	Asn
	50					55					60				
Leu	Leu	Phe	Gly	Glu	Asn	Pro	Asn	Lys	Ser	Val	Arg	Ala	Trp	Thr	Lys
65				70						75				80	
Pro	Phe	His	Glu	Ala	Gly	Ile	Gln	Thr	His	Met	Leu	Asp	Arg	Ala	Leu
			85						90				95		
Asn	Gly	Leu	Arg	Met	Ser	Pro	Val	Pro	Ala	Asp	Val	Arg	Lys	Leu	Phe
			100					105					110		
Tyr	Lys	Val	Lys	Lys	Ala	Gln	Gly	Thr	Asp	Ile	Thr	Arg	Thr	Phe	Cys
		115					120					125			
Gly	Leu	Asn	Asp	Val	Arg	Asn	Ile	Ala	Pro	Ser	Ile	Thr	Tyr	Ala	Lys
		130				135					140				
Asp	Ala	Gly	Met	Ile	Ser	Gln	Cys	Ser	Leu	Cys	Ile	Thr	His	Ser	Pro
145				150						155				160	
Ile	His	Thr	Val	Glu	Tyr	Tyr	Thr	Asn	Met	Ala	Leu	Glu	Leu	Ile	Lys
			165						170					175	
Leu	Gly	Ala	Asp	Glu	Ile	Cys	Ile	Lys	Asp	Met	Ala	Gly	Ile	Gly	Arg
		180						185					190		
Pro	Val	Ser	Leu	Gly	Lys	Ile	Val	Ala	Asn	Ile	Lys	Ala	Val	His	Pro
		195					200					205			
Asp	Ile	Pro	Ile	Gln	Tyr	His	Ser	His	Ala	Gly	Pro	Gly	Phe	Asn	Met
	210					215					220				
Ala	Ser	Ile	Leu	Glu	Val	Cys	Glu	Ala	Gly	Cys	Asp	Tyr	Val	Asp	Val
225				230						235					240

Gly	Met	Glu	Pro	Leu	Ser	Trp	Gly	Thr	Gly	His	Ala	Asp	Leu	Leu	Ser
				245					250					255	
Val	Gln	Ala	Met	Leu	Lys	Asp	Ala	Gly	Phe	Gln	Val	Pro	Glu	Ile	Asn
			260					265					270		
Met	Glu	Ala	Tyr	Met	Lys	Val	Arg	Ala	Leu	Ile	Gln	Glu	Phe	Met	Asp
			275				280						285		
Asp	Phe	Leu	Gly	Leu	Tyr	Ile	Ser	Pro	Lys	Asn	Arg	Leu	Met	Asn	Ser
			290			295					300				
Leu	Leu	Ile	Ala	Pro	Gly	Leu	Pro	Gly	Gly	Met	Met	Gly	Ser	Leu	Met
305					310					315					320
Ala	Asp	Leu	Glu	Thr	Asn	Leu	Glu	Ser	Ile	Asn	Lys	Tyr	Lys	Ala	Lys
				325					330					335	
His	Asn	Leu	Pro	Phe	Met	Thr	Gln	Asp	Gln	Leu	Leu	Ile	Lys	Leu	Phe
			340					345					350		
Asn	Glu	Val	Ala	Tyr	Val	Trp	Pro	Arg	Val	Gly	Tyr	Pro	Pro	Leu	Val
			355				360					365			
Thr	Pro	Phe	Ser	Gln	Tyr	Val	Lys	Asn	Leu	Ser	Met	Met	Asn	Val	Ile
			370			375					380				
Ala	Met	Glu	Lys	Gly	Lys	Glu	Arg	Trp	Gly	Met	Ile	Ala	Asp	Asp	Ile
385				390					395						400
Trp	Asp	Met	Ile	Leu	Gly	Lys	Ala	Gly	Arg	Leu	Pro	Gly	Lys	Leu	Ala
			405						410					415	
Pro	Glu	Ile	Ile	Glu	Lys	Ala	Glu	Arg	Glu	Gly	Arg	Lys	Phe	Phe	Glu
			420				425						430		
Gly	Asn	Pro	Gln	Asp	Asn	Tyr	Pro	Asp	Asp	Leu	Glu	Lys	Tyr	Arg	Lys
			435				440					445			
Leu	Met	Lys	Glu	Lys	Lys	Trp	Glu	Thr	Gly	Glu	Asp	Asp	Glu	Glu	Leu
450						455				460					
Phe	Glu	Tyr	Ala	Met	His	Pro	Ala	Gln	Tyr	Glu	Ala	Tyr	Lys	Ser	Gly
465					470					475					480
Lys	Ala	Lys	Glu	Asp	Val	Leu	Ala	Asp	Val	Ala	Lys	Arg	Arg	Ala	Glu
				485					490					495	
Lys	Glu	Gln	Val	Pro	Thr	Glu	Glu	Ala	Lys	Pro	Lys	Thr	Leu	Thr	Val
			500					505					510		
Gln	Val	Asp	Gly	Gln	Ala	Tyr	Arg	Val	Thr	Val	Ala	Tyr	Gly	Asp	Thr
			515				520					525			
Glu	Leu	Pro	Val	Ala	Pro	Ala	Ser	Gln	Pro	Ser	Ala	Ala	Ala	Gly	Glu
			530			535					540				
Gly	Lys	Glu	Val	Leu	Ser	Pro	Leu	Glu	Gly	Lys	Phe	Phe	Leu	Val	Lys
545					550					555					560
Asn	Ala	Gln	Glu	Thr	Pro	Leu	Lys	Val	Gly	Asp	Ala	Val	Lys	Glu	Gly
				565					570					575	
Asp	Val	Leu	Cys	Tyr	Val	Glu	Ala	Met	Lys	Thr	Tyr	Asn	Ala	Ile	Arg
			580					585					590		
Ala	Glu	Phe	Gly	Gly	Thr	Val	Thr	Ala	Ile	Ser	Ala	Asn	Pro	Gly	Asp
			595				600					605			
Thr	Val	Ser	Glu	Asp	Asp	Val	Leu	Met	Lys	Ile	Gly				
			610			615					620				

<210> 6873

<211> 265

<212> PRT

<213> B.fragilis

<400> 6873

Trp	Asp	Arg	Met	Pro	Ile	Asn	Ser	Pro	Gln	Ser	Ala	Thr	Leu	Gly	Asp
1				5				10					15		
Asn	Ala	Val	Arg	Val	Glu	Met	Glu	Ala	Gln	Ile	Leu	Leu	Gly	Gly	Ile
			20					25					30		

Asn Arg Ser Val Phe Ala Thr Ala Asp Asp Glu Leu Arg Pro Val Met
 35 40 45
 Asn Gly Ile Tyr Phe Asp Ile Thr Thr Glu Asp Ile Thr Met Val Ala
 50 55 60
 Ser Asp Gly His Lys Leu Val Arg Cys Lys Thr Leu Ala Ala Arg Gly
 65 70 75 80
 Asn Glu Arg Ala Ala Phe Ile Leu Pro Lys Lys Pro Ala Thr Leu Leu
 85 90 95
 Lys Asn Leu Leu Pro Lys Glu Ser Gly Met Val Val Ile Glu Phe Asp
 100 105 110
 Glu Arg Asn Ala Val Phe Thr Leu Glu Ser Tyr Arg Met Val Cys Arg
 115 120 125
 Leu Ile Glu Gly Arg Tyr Pro Asn Tyr Asn Ser Val Ile Pro Gln Asn
 130 135 140
 Asn Pro His Lys Val Thr Val Asp Arg Met Gln Leu Met Gly Ala Leu
 145 150 155 160
 Arg Arg Val Ser Ile Phe Ser Ser Gln Ala Ser Ser Leu Ile Lys Leu
 165 170 175
 Arg Met Gln Glu Asn Gln Ile Val Val Ser Ala Gln Asp Ile Asp Phe
 180 185 190
 Ser Thr Ser Ala Glu Glu Thr Gln Val Cys Gln Tyr Ala Gly Ala Ala
 195 200 205
 Met Ser Ile Gly Phe Lys Ser Thr Phe Leu Ile Asp Ile Leu Asn Asn
 210 215 220
 Ile Ser Ala Asp Glu Val Ile Glu Leu Ala Asp Pro Ser Arg Ala
 225 230 235 240
 Gly Val Ile Ile Pro Val Glu Gln Glu Glu Asn Glu Asp Leu Leu Met
 245 250 255
 Leu Leu Met Pro Met Met Leu Asn Asp
 260 265

<210> 6874
 <211> 282
 <212> PRT
 <213> B.fragilis

<400> 6874

Asn Arg Leu Ile Met Glu Lys Asn Ile Ser Gln Glu Lys Arg Ile Glu
 1 5 10 15
 Glu Leu Glu Ala Arg Leu Lys Glu Gln Glu Lys Leu Gly Ser Leu Gly
 20 25 30
 Leu Leu Ser Ala Gly Ile Ala His Glu Ile Gln Asn Pro Leu Asn Phe
 35 40 45
 Val Ile Asn Phe Ser Lys Leu Ser Gly Gln Leu Leu Ala Asp Leu Ala
 50 55 60
 Asp Arg Val Asp Glu Ala Lys Ala Arg Ile Pro Glu Ala Glu Leu Glu
 65 70 75 80
 Asp Ile Lys Asp Ile Leu Ser Gly Leu Arg Glu Asn Val Asp Lys Ile
 85 90 95
 Lys Glu His Gly Asp Arg Ala Ile Ser Ile Ile Arg Gly Ile Leu Leu
 100 105 110
 Tyr Ser Arg Gly Lys Glu Asp Glu Phe Met Pro Thr Gln Ile Gln Lys
 115 120 125
 Leu Thr Lys Glu Tyr Val Trp Leu Ala Tyr His Ala Met Arg Ala Asn
 130 135 140
 Tyr Lys Asn Phe Asn Ile Ala Ile Arg Glu Asp Tyr Ala Lys Asp Ile
 145 150 155 160
 Pro Ser Ile Arg Leu Ile Pro Gln Asp Phe Ser Arg Ala Val Leu Asn
 165 170 175

Val Met Asn Asn Ala Cys Tyr Ala Val Trp Lys Lys Trp Gln Asn Ala
 180 185 190
 Pro Glu Gly Tyr Ser Pro Glu Ile Met Val Thr Leu Glu Lys Leu Asp
 195 200 205
 Lys Arg Val Val Leu Ser Ile Arg Asp Asn Gly Glu Gly Met Ser Pro
 210 215 220
 Glu Val Lys Arg Lys Leu Phe Asp Ser Phe Thr Thr Lys Pro Val
 225 230 235 240
 Gly Gln Gly Thr Gly Leu Gly Met Ala Ile Val Arg Asp Ile Ile Glu
 245 250 255
 Asn Lys His His Gly Lys Val Leu Phe Asp Ser Val Leu His Glu Tyr
 260 265 270
 Thr Cys Phe Arg Phe Ile Ile Pro Ile Ala
 275 280

<210> 6875

<211> 440

<212> PRT

<213> B.fragilis

<400> 6875

Thr Lys Gln Ile Asn Trp Tyr Val Ala Thr Leu Ile Ser Ser Leu Phe
 1 5 10 15
 Ala Ile Lys Leu Lys Lys Tyr Met Arg Thr Cys Ser Pro Arg Leu Ala
 20 25 30
 Lys Glu Lys Tyr Cys Thr Gly Cys Met Ala Cys Ser Asp Ala Cys Thr
 35 40 45
 His Asp Ala Ile Lys Ile Val Glu Lys Asn Cys Met Pro Phe Val Lys
 50 55 60
 Val Asp Thr His Lys Cys Met Asn Cys His Leu Cys Glu Lys Ala Cys
 65 70 75 80
 Pro Ile Ile Thr Pro Val Lys Lys Asn Arg Ala Glu Lys Met Asn Val
 85 90 95
 Tyr Gly Gly Trp Ala Asn Asp Glu Gln Thr Arg Ile Asp Ala Ala Ser
 100 105 110
 Gly Gly Gly Phe Ser Gly Leu Ala Gln Ser Phe Phe His Leu His Lys
 115 120 125
 Glu Asp Lys Val Ala Val Ile Gly Ala Thr Leu Ala Asn Asn Arg Val
 130 135 140
 Tyr His Gln Leu Ile Glu Gln Glu Lys Asp Ile Val Leu Leu Thr Asn
 145 150 155 160
 Ser Lys Tyr Ile Gln Ser Asp Thr Gln Gly Ile Tyr Lys Glu Val Ile
 165 170 175
 Glu Arg Leu Lys Thr Gly Tyr Trp Ile Leu Phe Ser Gly Cys Pro Cys
 180 185 190
 Gln Ile Ala Gly Leu Tyr Gly Phe Leu Gly Lys Lys Arg Asp Ser Glu
 195 200 205
 Arg Leu Ile Thr Ile Glu Val Val Cys His Gly Ile Ala Ser Tyr Glu
 210 215 220
 Ala Leu Asp Leu His Leu Lys Tyr Tyr Asn Ser Ser Arg Ile Tyr Arg
 225 230 235 240
 Phe Arg Asp Lys Arg His Gly Thr Gln Asp Trp Lys Gln Ser Gln Cys
 245 250 255
 Thr Thr Ile Glu Gln Asn Gly Glu Glu Ile Lys Leu Lys Arg Lys Asp
 260 265 270
 Asp Met Phe Tyr Ala Ile Tyr Ala Gly Trp Met Leu Asp Arg Lys Ser
 275 280 285
 Cys Ser Asn Cys Gln Phe Ala Glu Ile Asn Arg Val Ala Asp Ile Thr
 290 295 300

Ile Ala Asp Phe Trp Gly Leu Gln Val Pro Asp Tyr Tyr Lys Gln Gly
 305 310 315 320
 Val Ser Leu Ile Ile Ala Asn Asn Asn Lys Ala Asp Thr Met Ile Lys
 325 330 335
 Ala Ala Asp Ala Ile Tyr Thr Phe Lys Glu Ser Leu Arg Thr Ala Ile
 340 345 350
 Asn Gly Asn Pro His Leu Phe Thr Gly Tyr Lys Leu Ile Gln Phe His
 355 360 365
 Pro Ile Val Met Trp Pro Asp Phe Phe Arg Lys Ile Leu Pro Lys Arg
 370 375 380
 Ile Arg Phe Lys Thr Leu Thr Asn Arg Met Pro Tyr Lys Leu Phe Trp
 385 390 395 400
 Ala Leu Tyr Lys Leu Gly Thr Ile Tyr Leu Val Lys Tyr Gln Lys Lys
 405 410 415
 Gln Leu Ile Ser Lys Phe Gln Lys Asp Asp Asn Leu Leu Lys Leu Leu
 420 425 430
 Asn Asn Ala Asn Arg Gly Gly Gly
 435 440

<210> 6876

<211> 332

<212> PRT

<213> B.fragilis

<400> 6876

Pro Pro Lys Met Asn Asn Thr Asn Pro Leu Val Ser Ile Ile Val Pro
 1 5 10 15
 Val Tyr Lys Val Glu Arg Tyr Ile His Arg Ser Ile Asp Ser Leu Leu
 20 25 30
 Arg Gln Thr Tyr Asn Asn Leu Glu Ile Ile Leu Val Asp Asp Gly Ser
 35 40 45
 Pro Asp Asn Cys Pro Phe Ile Cys Asp Lys Tyr Ala Met Gln Asp Asn
 50 55 60
 Arg Ile Arg Val Ile His Lys Ser Asn Gly Gly Leu Ser Asp Ala Arg
 65 70 75 80
 Asn Ala Ala Leu Asn Val Met Thr Gly Gln Tyr Val Thr Phe Val Asp
 85 90 95
 Ser Asp Asp Tyr Ile Ala Asp Asn Met Ile Glu Lys Phe Ile Glu Thr
 100 105 110
 Val Lys Leu Tyr Gln Cys Asn Met Val Val Ala Gly Met Asn Ile Ile
 115 120 125
 Asp Lys Asn Asn Gln Ile Tyr Asp Tyr Arg Arg Thr Leu Thr Ser Thr
 130 135 140
 Leu Ser Thr Gly Ile Asp Ile Thr Arg Lys Leu Leu Lys Asp Val Phe
 145 150 155 160
 Pro Phe Asn Phe Val Cys Ala Lys Ile Phe Glu Ser Ser Leu Phe Glu
 165 170 175
 Glu Ile Arg Phe Pro Val Gly Arg His Tyr Glu Asp Thr Ala Thr Thr
 180 185 190
 Tyr Lys Leu Thr His Lys Cys Glu Arg Ile Tyr Cys Ile Ala Asp Cys
 195 200 205
 Leu Tyr Phe Tyr Glu Leu Glu Arg Glu Gly Asn Ile Thr Ser Glu Leu
 210 215 220
 Asn Thr Ser Lys Ala Ile Lys Ser Tyr Ile Asp Gly Cys Leu Asn Ser
 225 230 235 240
 Gln Glu Gln Ile Phe Phe Cys Gln Lys His Lys Asp Phe Ser Asp Leu
 245 250 255
 Leu Pro Val Leu Thr Lys Arg Leu Gln Leu Trp Ala Leu Leu Ala Ile
 260 265 270

Gln Ser Ala Ile Ser Leu Gly Tyr Lys Glu Tyr Met Phe Tyr Tyr His
 275 280 285
 Gln Ile Arg Ile Tyr Ile Arg Ser Leu Ser Tyr Thr Gln Arg Met Thr
 290 295 300
 His Leu Gln Ile Ala Leu Thr Phe Pro Ile Ile Tyr Tyr Ser Leu Tyr
 305 310 315 320
 Pro Leu Leu Ser Arg Leu Lys Lys Met Tyr Lys Asn
 325 330

<210> 6877
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 6877
 Met Asn Asn Val Ala Glu His Ala Arg Glu Gln Lys Ala Gly Met Lys
 1 5 10 15
 Cys Pro Gln Cys Gly Ala Phe Ile Glu Thr Ser Ile Phe Glu Leu Leu
 20 25 30
 Thr Ser Asn Ala Leu Gln Cys Pro Ser Cys His Leu Arg Leu Asn Ile
 35 40 45
 Asp Arg Met Lys Ser Lys Ala Ala Phe Asp Ala Leu Arg Lys Val Gln
 50 55 60
 Asn Ala Gln Glu Asn Leu Glu Arg Lys Ser Lys Phe Asn Gly
 65 70 75

<210> 6878
 <211> 405
 <212> PRT
 <213> B.fragilis

<400> 6878
 Ile Arg Tyr Val Ser Ile Tyr Gly Thr Ile Leu Tyr Leu Asn Ile Ser
 1 5 10 15
 Val Asn Val Ile Thr Leu Thr Ser Lys Tyr Asp Cys Cys Gly Cys Thr
 20 25 30
 Ala Cys Thr Ser Ala Cys Asn Arg Gly Ala Ile Ile Met Gln Glu Asp
 35 40 45
 Glu Gln Gly Phe Leu Tyr Pro His Ile Asn Thr Thr Gln Cys Ile Asp
 50 55 60
 Cys Gly Leu Cys Asn Lys Val Cys Pro Val Phe Arg Tyr Asp Val Ile
 65 70 75 80
 Ser Asn Lys Lys Asn Val Asn Pro His Ile Leu Ala Leu His His His
 85 90 95
 Asn Glu Lys Thr Trp Ile Ser Ser Ser Ser Gly Gly Val Phe Ala Ser
 100 105 110
 Leu Thr Asp Tyr Ala Leu Arg Gln Ala Gly Val Ile Phe Gly Ala Ile
 115 120 125
 Tyr Asp Asp Asn Phe Val Val Val His Arg Arg Ala Glu Thr Gln Glu
 130 135 140
 Asp Thr Leu Lys Phe Arg Gly Ser Lys Tyr Val Gln Ser Asn Leu Thr
 145 150 155 160
 Gly Ile Tyr Gln Gln Val Lys Phe Tyr Leu Gln Glu Gln Arg Phe Val
 165 170 175
 Leu Phe Ser Gly Thr Pro Cys Gln Val Glu Gly Leu Lys Gly Tyr Leu
 180 185 190
 Gln Arg Ser Tyr Asp Asn Leu Leu Thr Val Asp Ile Leu Cys His Gly
 195 200 205
 Val Pro Ser Pro Arg Val Phe His Asp Tyr Leu Asn Phe Ile Arg Gln

210	215	220
Asn Ser Asp Phe His Phe Thr Gly Ile Phe Met Lys Asp Lys Thr Phe		
225	230	235
Gly Trp Gly Tyr Gln Asn Ser Arg Leu Phe Phe Gly Lys Asn Ala Ser		240
	245	250
Gln Phe Asn Thr Val Leu Ser Arg Leu Trp Asn Asp Ile Phe Tyr Ser		255
	260	265
His Leu Thr Thr Arg Pro Ser Cys His Ala Cys Arg Phe Thr Asn Tyr		270
	275	280
Leu Arg Pro Gly Asp Ile Thr Ile Gly Asp Phe Trp Gly Ile Glu Lys		285
	290	295
His His Pro Gln Phe Thr Asp Ser Arg Gly Ile Ser Leu Ile Met Leu		300
305	310	315
Asn Asn Thr Lys Ala Glu Ile Val Trp Asn His Ile Lys Asp Asp Phe		320
	325	330
Asn Tyr Leu Glu Ser Asn Ile Lys Glu Cys Ile Gln Pro Asn Leu Lys		335
	340	345
Tyr Pro Val Pro Glu Pro Val Asn Lys Ala Thr Phe Trp Gln Asp Tyr		350
	355	360
Ala Ser Met Pro Phe Phe Gln Ile Met Asn Lys Tyr Tyr Arg Ile Thr		365
370	375	380
His Gln Asp Leu Leu Lys Asn Arg Phe Tyr Met Ile Leu Leu Thr Leu		385
385	390	395
Lys Lys Arg Phe Thr		400
	405	

<210> 6879

<211> 307

<212> PRT

<213> B.fragilis

<400> 6879

Leu Ser Val Val Arg Asp Leu Leu Thr Val Pro Leu Lys Asn Ala Lys	
1	5
Leu Glu Ala Ala Gly Ala Gly Ala Ile Val Leu Lys Ser Leu Phe Glu	
	20
Glu Gln Ile Met Met Glu Ala Asp Arg Leu Arg Asn Pro Ser Tyr Tyr	
	35
Pro Glu Gly Ser Asp Tyr Leu Ala Glu Tyr Ile Arg Asn His Lys Leu	
50	55
Thr Glu Tyr Leu Glu Leu Ile Lys Glu Ser Lys Lys Ile Cys Thr Ile	
65	70
Pro Val Ile Ala Ser Ile Asn Cys Tyr Thr Asp Ala Glu Trp Val Asp	
	85
Phe Ala Lys Gln Ile Glu Glu Ala Gly Ala Asp Ala Leu Glu Ile Asn	
	100
Ile Leu Ala Leu Gln Ser Asp Ile Gln Tyr Lys Tyr Gly Ser Phe Glu	
	115
Gln Arg His Ile Asp Ile Leu Ser His Ile Lys Lys Thr Ile Arg Ile	
	130
Pro Val Ile Met Lys Leu Gly Ser Asn Phe Thr Asn Pro Val Ala Leu	
145	150
Ile Asp Gln Leu Tyr Ala Asn Gly Ala Ala Val Val Leu Phe Asn	
	165
Arg Phe Tyr Gln Pro Asp Ile Asp Val Glu Lys Met Glu His Thr Ser	
	180
Gly Asp Val Phe Ser Asn Ala Ser Asp Leu Ser Thr Thr Leu Arg Trp	
	195
Ile Gly Ile Ser Ser Ser Leu Val Ser Lys Ile Asp Tyr Ala Ala Ser	
	200
	205

210 215 220
 Gly Gly Ile His Lys Pro Asp Gly Ile Val Lys Ala Ile Leu Ala Gly
 225 230 235 240
 Ala Ser Ala Ile Glu Ile Cys Ser Ala Ile Tyr Gln Asn Thr Asn Leu
 245 250 255
 Phe Val Gly Glu Met Asn Arg Phe Leu Ser Ala Trp Met Glu Arg Lys
 260 265 270
 Gly Phe Lys His Ile Ser Gln Phe Lys Gly Lys Leu Asn Ala Lys Asp
 275 280 285
 Val Glu Gly Ile Asn Met Phe Glu Arg Thr Gln Phe Leu Lys Tyr Phe
 290 295 300
 Ser Glu Lys
 305

<210> 6880
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 6880
 Asn Arg Pro Val Tyr Gln Cys Phe Tyr Glu Ile Thr Tyr Thr Cys Lys
 1 5 10 15
 Val Ile Leu Asn Asp Val Lys Tyr Tyr Gly Val Arg Arg Asp Lys Ser
 20 25 30
 Lys Phe His Val Leu Asn Tyr Asn Ile Trp Leu Leu Val Tyr Leu Leu
 35 40 45
 Tyr Glu Ser Lys Glu Met Gln Tyr Met Ile Asp Tyr Ser
 50 55 60

<210> 6881
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 6881
 Asn Leu Lys Val Leu Tyr Met Gly Lys Asn Arg Asn His Tyr Ser Phe
 1 5 10 15
 Phe Leu Tyr Phe Val Phe Ile Ile Phe Val Leu Leu Gly Cys Arg Pro
 20 25 30
 Val Arg Val Gln Met Pro Asp Gly Met Tyr Gly Arg Trp Lys Ser Ser
 35 40 45
 Ala Gly Arg Pro Asp Ile Thr Leu Gly Thr Asp Ser Ile Gly Ser Phe
 50 55 60
 Ala Ile Val His His Arg Ile Tyr Asp Gly Lys Ile Cys Pro Val Arg
 65 70 75 80
 Tyr Pro Leu His Leu Asn Ser Pro Thr Lys Gly Tyr Ile Arg Ala Glu
 85 90 95
 Gly Cys Ile Leu Phe Tyr Tyr Asp Ser Leu Lys Cys Val Leu Tyr Phe
 100 105 110
 Ser Pro Gly Gly Asp Tyr Thr Gln
 115 120

<210> 6882
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 6882
 Ile Asn Glu Val Thr Asp Ser Leu Lys Lys Pro Leu Thr Ile Ile Thr

1	5	10	15
Met	Ala	Asp	Leu
20	Lys	Thr	Thr
25	Phe	Ala	Gly
30	Leu	Thr	Leu
35	Lys	Asn	Pro
40	Val	Ile	Ile
45	Ser	Ser	Ser
50	Gly	Gly	Gly
55	Ser	Cys	Arg
60	Arg	Ser	His
	Cys	Pro	Glu
	Ile	Thr	Ile

<210> 6883

<211> 371

<212> PRT

<213> B.fragilis

<400> 6883

Ala	Ser	Ile	Phe	Pro	Lys	Asp	Ile	Phe	Leu	Val	Met	Lys	Val	Ser	Ile
1			5						10					15	
Ile	Val	Pro	Cys	Tyr	Ser	Val	Ala	Ser	Lys	Leu	Pro	Arg	Cys	Val	His
		20							25				30		
Asn	Leu	Leu	Ala	Gln	Thr	Phe	Thr	Asp	Trp	Glu	Leu	Ile	Leu	Ile	Asp
		35							40				45		
Asp	Gly	Ser	Thr	Asp	Asn	Thr	Trp	Asp	Ile	Cys	Asn	Ser	Phe	Thr	Lys
	50					55					60				
Asn	Asn	Ala	His	Ile	His	Ala	Val	His	Lys	Glu	Asn	Gly	Gly	Val	Ser
65				70						75				80	
Ser	Ala	Arg	Asn	Thr	Gly	Ile	Glu	Ile	Ala	Lys	Gly	Glu	Phe	Ile	Thr
			85						90					95	
Phe	Ile	Asp	Ser	Asp	Asp	Tyr	Val	Lys	Pro	Asp	Tyr	Leu	Gln	Lys	Leu
			100					105					110		
Val	Glu	Gly	Gln	Glu	Ala	Asp	Leu	Val	Leu	Cys	Gly	Phe	Arg	Ser	Ser
		115					120					125			
Thr	Gly	Ile	Asp	Phe	Thr	Pro	Glu	Pro	Gln	Tyr	Leu	Ile	Gly	Asp	Asp
	130					135					140				
Leu	Ser	Lys	Asn	Ile	Gln	Ala	Ile	Val	Glu	Asn	Asp	Tyr	Leu	Leu	Tyr
145				150						155				160	
Ser	Pro	Trp	Cys	Lys	Leu	Phe	Arg	Arg	Asp	Ile	Ile	Gln	Lys	His	Gln
			165						170					175	
His	Arg	Phe	Asp	Pro	Glu	Ile	Arg	Leu	Gly	Glu	Asp	Thr	Ile	Phe	Cys
		180						185					190		
Tyr	Lys	Tyr	Leu	Leu	Tyr	Cys	Ser	Ser	Ile	Lys	Val	Val	Ala	Ser	Asn
	195						200					205			
Ser	Tyr	Phe	Tyr	Asp	Gly	Val	Trp	Gly	Gly	Tyr	Lys	Lys	Tyr	Val	Leu
	210					215					220				
Thr	Arg	Gln	Glu	Val	Glu	Tyr	Leu	Asp	Lys	Ala	Glu	Ile	Thr	Thr	Leu
225					230					235				240	
His	Asp	Ile	Asn	Gln	His	Phe	Asn	Cys	Arg	Ile	Asp	Leu	Thr	Tyr	Arg
			245						250					255	
Gly	Tyr	His	Val	Ala	Met	Leu	Lys	Gly	Leu	Tyr	Glu	Lys	Phe	Arg	Asp
		260						265					270		
Tyr	Asp	Thr	Phe	Glu	Met	Tyr	Thr	Arg	Thr	His	Asp	Val	Leu	Pro	Pro
	275						280					285			
Glu	His	Phe	Phe	Ala	Asn	His	Lys	Leu	Ser	Tyr	Ile	Phe	Trp	Gly	Ile
	290				295						300				
Val	Glu	Leu	Glu	Thr	Leu	Tyr	Val	Asp	Lys	Glu	Tyr	Cys	Ala	Gly	Lys
305					310					315				320	
Leu	Phe	Met	Gln	Arg	Leu	His	His	Phe	Phe	Thr	Ile	Pro	Thr	Asn	Gln
			325					330						335	
Leu	Leu	Ser	Tyr	Ser	Tyr	Lys	Met	Arg	Leu	Ile	His	Tyr	Leu	Val	Lys
		340					345					350			
Ser	Lys	His	Tyr	Thr	Met	Ala	His	Val	Leu	Leu	Ile	Phe	Leu	Ser	Ile

365

[illegible]

Leu 1	Gln	Gln	Phe	Ile 5	Thr	Val	Val	Val	Asn 10	Trp	Leu	Phe	Asp	Cys 15	Lys
Tyr	Gln	His	Leu 20	Asn	Leu	Arg	Ile	Met 25	Gly	Thr	Lys	Lys	Asn 30	Phe	Val
Leu	Asp	Thr 35	Asn	Val	Ile	Leu	His 40	Asp	Tyr	Asn	Cys	Leu 45	Lys	Asn	Phe
Gln	Glu	Asn	Asp	Ile	Tyr	Leu 50	Pro 55	Ile	Val	Val	Leu 60	Glu	Glu	Leu	Asp
Lys 65	Phe	Lys	Lys	Gly 70	Asn	Glu	Gln	Ile	Asn 75	Tyr	Asn	Ala	Arg	Glu	Phe 80
Val	Arg	Glu	Leu 85	Asp	Leu	Ile	Thr	Asp 90	Asp	Ser	Leu	Phe	Thr 95	His	Gly
Ala	Pro	Leu 100	Gly	Glu	Gly	Leu	Gly 105	Lys	Leu	Phe	Ile	Val 110	Thr	Gly	Asp
Ser	Glu	Ala 115	Pro	Lys	Val	His 120	Glu	Ser	Phe	Pro	Ala 125	Arg	Lys	Pro	Asp
His	Gln 130	Ile	Leu	Ala	Val	Ala 135	Glu	Tyr	Leu	Ala	Arg 140	Lys	Tyr	Pro	Lys
Met 145	Lys	Asn	Ile	Leu 150	Val	Thr	Lys	Asp	Val 155	Asn	Leu	Arg	Met	Lys	Ala 160
Arg	Ser	Ile	Gly 165	Ile	Leu	Cys	Glu	Asp 170	Tyr	Ile	Thr	Asp 175	Lys	Val	Val
Asn	Val	Asp 180	Ile	Phe	Glu	Lys	Ser 185	Asn	Glu	Val	Phe	Glu 190	Asn	Ile	Glu
Pro	Asp 195	Leu	Ile	Asp	Arg	Ile 200	Tyr	Ser	Ser	Arg	Glu 205	Gly	Leu	Asp	Ile
Ser	Glu 210	Phe	Asp	Phe	Lys	Asp 215	Ile	Ile	Arg	Pro	Asn 220	Glu	Cys	Phe	Ile
Leu 225	Lys	Ser	Asp	Arg 230	Ser	Val	Leu	Ala	Arg 235	Tyr	Asn	Pro	Phe	Thr	
His	Thr	Val	Cys 245	Arg	Val	Asn	Lys	Thr 250	Lys	Asn	Tyr	Gly 255	Ile	Glu	Pro
Arg	Asn	Ala 260	Glu	Gln	Ser	Phe	Ala 265	Phe	Glu	Ile	Leu	Asn 270	Asp	Pro	Asp
Ile	Lys 275	Leu	Val	Ala	Leu	Thr	Gly 280	Lys	Ala	Gly	Thr	Gly 285	Lys	Thr	Leu
Leu	Ala 290	Leu	Ala	Ala	Ala	Leu 295	Gly	Lys	Leu	Thr	Glu 300	Tyr	Lys	Gln	Ile
Leu 305	Leu	Ala	Arg	Pro 310	Ile	Val	Ala	Leu	Ser 315	Asn	Lys	Asp	Leu	Gly	Phe 320
Leu	Pro	Gly	Asp 325	Ala	Thr	Glu	Lys	Val 330	Ala	Pro	Tyr	Met 335	Gln	Pro	Leu
Phe	Asp	Asn 340	Leu	Asn	Val	Ile	Lys 345	Arg	Gln	Phe	Ala	Ser 350	Asn	Ser	Thr
Glu	Val 355	Lys	Arg	Leu	Glu	Asp 360	Met	Gln	Lys	Ser	Glu 365	Gln	Leu	Val	Ile
Glu	Ala 370	Leu	Ala	Phe 375	Ile	Arg	Gly 380	Arg	Ser	Leu	Ser 385	Glu	Thr	Tyr	Cys
Ile	Ile	Asp	Glu	Ala	Gln	Asn	Leu	Thr	Pro	His	Glu	Ile	Lys	Thr	Ile

385 390 395 400
 Ile Thr Arg Ala Gly Glu Gly Thr Lys Met Val Phe Thr Gly Asp Ile
 405 410 415
 Gln Gln Ile Asp Gln Pro Tyr Leu Asp Ser Gln Ser Asn Gly Leu Val
 420 425 430
 Tyr Met Ile Asp Arg Met Lys Asp Gln Asn Leu Phe Ala His Val Asn
 435 440 445
 Leu Val Lys Gly Glu Arg Ser Glu Leu Ser Glu Leu Ala Ser Asn Leu
 450 455 460
 Met
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 Pro Gln Phe Ser Asp Pro Ala Lys Pro Gln Phe Tyr Lys Pro Pro Leu
 1 5 10 15
 Ile His Gln Pro Arg Val Lys Gly Gln Pro Tyr Phe Leu Arg Ser Ser
 20 25 30
 Arg Gln Thr Leu Thr Thr Cys Tyr Leu Gly Pro Ile Asn Asn Asn Leu
 35 40 45
 Ser Ser Asp Asn Arg Cys Trp His Leu Ser His Asn Trp Lys Thr Thr
 50 55 60
 Phe Pro Lys Pro Leu Gly
 65 70

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 Ser Trp Leu Ser Ser Pro Gln Ser Pro Tyr Ser Val Ser Ser Phe Gly
 1 5 10 15
 Tyr Ser Pro Phe Asn Leu Thr Asp Ser Asp Met Lys Thr Thr Asp His
 20 25 30
 Phe Lys Arg Thr Ile Gln Met Tyr Leu Glu Gln Arg Ala Ala Glu Asp
 35 40 45
 Ala Leu Phe Ala Lys Asn Tyr Arg Asn Pro Ala Lys Asn Ile Asp Asp
 50 55 60
 Cys Val Thr Tyr Ile Leu Asn Tyr Val Gln Lys Ser Gly Cys Asn Gly
 65 70 75 80
 Phe Thr Asp Gly Glu Ile Tyr Gly Gln Ala Val His Tyr Tyr Asp Glu
 85 90 95
 Asn Glu Ile Glu Val Gly Lys Pro Ile Gln Cys Gln Ile Ala Val Asn
 100 105 110
 His Val Val Glu Leu Thr Ala Glu Glu Lys Ala Glu Ala Arg Gln Asn
 115 120 125
 Ala Ile Arg Gln Tyr Gln Asp Gly Leu Met Arg Glu Met Gln Asn Arg
 130 135 140
 Asn Lys Pro Arg Thr Ala Thr Lys Ala Thr Val Gln Glu Val Gln Gln
 145 150 155 160
 Pro Ser Leu Phe Asp Leu Gly Leu
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Val	Glu	Thr	Ser	Asn	Met	Gly	Lys	Gln	Lys	Phe	Tyr	Val	Val	Trp	Asp
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Gly	Val	Thr	Pro	Gly	Ile	Tyr	Thr	Ser	Trp	Thr	Glu	Cys	Gln	Leu	Gln
			20					25					30		
Val	Lys	Gly	Tyr	Asp	Ser	Ala	Lys	Tyr	Lys	Ser	Phe	Asp	Asn	Arg	Glu
		35					40					45			
Glu	Ala	Glu	Arg	Ala	Phe	Ala	Ala	Ser	Pro	Tyr	Ala	Tyr	Ile	Gly	Lys
	50					55					60				
Asn	Ala	Lys	Lys	Lys	Ile	Thr	Gly	Pro	Ser	Thr	Glu	Met	Leu	Pro	Ala
65					70					75				80	
Ala	Val	Ile	Glu	Asn	Ser	Leu	Ala	Val	Asp	Ala	Ala	Cys	Ser	Gly	Asn
				85					90					95	
Pro	Gly	Pro	Met	Glu	Tyr	Arg	Gly	Val	His	Val	Ala	Ser	Arg	Gln	Glu
			100					105					110		
Ile	Phe	His	Phe	Gly	Pro	Met	Lys	Gly	Thr	Asn	Asn	Ile	Gly	Glu	Phe
	115						120					125			
Leu	Ala	Leu	Val	His	Gly	Leu	Ala	Leu	Leu	Lys	Gln	Lys	Gly	Phe	Asp
	130					135					140				
Met	Pro	Ile	Tyr	Ser	Asp	Ser	Ala	Asn	Ala	Ile	Ser	Trp	Val	Lys	Gln
145					150					155				160	
Lys	Lys	Cys	Lys	Thr	Lys	Leu	Ser	Arg	Thr	Ala	Glu	Thr	Glu	Ala	Leu
				165					170					175	
Phe	Val	Leu	Ile	Glu	Arg	Ala	Glu	Lys	Trp	Leu	Lys	Glu	Asn	Lys	Tyr
			180					185					190		
Thr	Thr	Pro	Ile	Leu	Lys	Trp	Glu	Thr	Arg	Glu	Trp	Gly	Glu	Ile	Pro
		195					200					205			
Ala	Asp	Phe	Gly	Arg	Lys										
	210														

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 <212> PRT
 <213> B.fragilis

<400> 6888

Lys	Asn	Gln	Ser	Asn	Lys	Glu	Arg	Ser	Ile	Phe	Met	Lys	Lys	Ser	Phe
1				5					10					15	
Glu	Glu	Ala	Leu	Lys	His	Arg	Arg	Thr	Tyr	Tyr	Ser	Ile	Thr	Asn	Gln
			20					25					30		
Ser	Pro	Val	Ser	Asp	Glu	Glu	Ile	Glu	Arg	Ile	Val	Asn	Leu	Ala	Val
		35					40					45			
Thr	His	Val	Pro	Ser	Ala	Phe	Asn	Ser	Gln	Ser	Thr	Arg	Val	Val	Leu
	50					55					60				
Leu	Leu	Gly	Glu	Asn	His	Lys	Lys	Leu	Trp	His	Ile	Val	Lys	Glu	Thr
65				70					75					80	
Leu	Arg	Lys	Ile	Val	Pro	Pro	Glu	Val	Phe	Lys	Thr	Thr	Glu	Ala	Lys
				85					90					95	
Ile	Asp	Asn	Ser	Phe	Ala	Ser	Gly	Tyr	Gly	Thr	Val	Leu	Phe	Phe	Glu
		100					105						110		
Asp	Gln	Ser	Val	Val	Lys	Gly	Leu	Gln	Glu	Ala	Phe	Ser	Ser	Tyr	Lys
		115					120					125			
Asp	Asn	Phe	Pro	Gly	Trp	Ser	Leu	Gln	Thr	Ser	Ala	Met	His	Gln	Leu
	130						135					140			
Ala	Val	Trp	Thr	Met	Leu	Glu	Asp	Val	Gly	Phe	Gly	Ala	Ser	Leu	Gln

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<210> 6889
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<212> PRT
<213> B.fragilis
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Asp 1	Cys	Val	Ser	Met 5	Asn	Val	Ser	Gly	Ala 10	Thr	Ala	Leu	Trp	Thr 15	Arg
Leu	Ser	Val	Lys 20	Thr	Glu	Phe	Gly	Thr 25	Lys	Asp	Tyr	Val 30	Val	Asp	Val
Lys	Lys	Asp 35	Leu	Lys	Asn	Ile	Ser 40	Ser	Asp	Phe	Asn	Glu 45	Arg	Ser	Leu
His	Ser 50	Val	Val	Cys	Met 55	Glu	Lys	Gln	Leu	Ser	Ala 60	Asp	Thr	Leu	Asn
Arg 65	Ile	Trp	Ala	Asp 70	Ser	Leu	Arg	Met	Arg	His 75	Ile	Val	Ala	Lys	Thr 80
Ser	Val	Gln	Val	Val 85	Ser	Ala	Asp	Ser	Ser 90	Lys	Cys	Ile	Arg	Ser	Glu
Gly	Ser	Cys 100	Asp	Asn	Asn	Cys	Phe 105	Val	Ser	Pro	Ile	Trp 110	Ile	Ala	Tyr
Val	Gly	Asn 115	Glu	Cys	Glu	Val	Glu 120	Val	Ala	Gly	Phe	Leu 125	Ser	Ser	Thr
Cys	Trp 130	Ser	Val	Ile	Arg	Tyr 135	Ser	Ser	Ser	Ser	Phe 140	Val	Leu	Ile	Val
Gly 145	Val	Thr	Phe	Ile 150	Leu	Phe	Ala	Phe	Phe 155	Tyr	Tyr	Val	Tyr	Lys	Val 160
Lys	Lys	His	Leu	Ser 165	Asp	Ser	Glu	Val	Glu 170	Glu	Glu	Leu	Leu	Lys	Glu
Arg	Leu	Glu	Lys 180	Glu	Arg	Glu	Arg	Tyr 185	Gln	Asp	Leu	Glu 190	Glu	Lys	Arg
Arg	Gln 195	Tyr	Glu	Gln	Gln	Leu	Asn 200	Leu	Leu	Gln	Gln	Glu 205	Glu	Lys	Met
Arg	Ile 210	Arg	Glu	Leu	Ser 215	Asp	Leu	Arg	Glu	Lys	His 220	Lys	Gln	Lys	Glu
Ala 225	Gln	Ile	Glu	Val 230	Leu	Ser	Val	Glu	Lys	Lys 235	Arg	Ser	Lys	Glu	Gln
Gln	Ser	Ile	Leu	Glu 245	Lys	Glu	Cys	Gln	Glu 250	Gly	Met	Leu	Gln	Ile	Thr
Met	Leu	Ser	Asp 260	Lys	Leu	Glu	Lys	Glu 265	Lys	Ile	Asp	Arg	Gly 270	Glu	Leu
Gln	Gln	Lys 275	Leu	Ala	Ala	Cys	Glu 280	Leu	Gln	Ile	Ala	Glu 285	Leu	Arg	Lys
Ile	Lys 290	Glu	Met	Leu	Gly 295	Glu	Glu	Leu	Val	Ile	Tyr 300	Lys	Leu	Cys	Ser
Gly 305	Leu	Thr	Phe	Asp 310	Pro	Arg	Asn	His	Ile 315	Leu	Asp	Cys	Ala	Gly	Asn
Arg	Ile	Lys	Leu	Asp 325	Ala	Gln	Gly	Ser	Arg 330	Leu	Leu	Leu	Leu	Phe	Leu
Glu	Ala	Ser	Glu	Asn	Lys	Leu	Ser	Tyr	Glu	Glu	Leu	Leu	Glu	Met	Met

[illegible]

	340		345		350
Trp	Ala	Asp	Arg	Arg	Lys
	355				360
Arg	Leu	Arg	Lys	Ala	Leu
	370			375	
Asn	Glu	Gly	Gly	Tyr	Gln
	385			390	
Ser	Gln	Arg	Glu	Leu	Phe
				405	

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<400> 6890

His	Pro	Val	Ser	Thr	Thr	Lys	Ser	Lys	Val	Thr	Ile	His	Lys	Lys	Val
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Ile	Ser	Met	Lys	Thr	Ile	Ile	Ala	Glu	Lys	Pro	Ser	Val	Ala	Arg	Glu
			20					25					30		
Ile	Ala	Arg	Ile	Val	Gly	Ala	Thr	Lys	Arg	Glu	Glu	Gly	Tyr	Phe	Glu
		35					40					45			
Gly	Gly	Asp	Cys	Ala	Val	Thr	Trp	Ala	Phe	Gly	His	Leu	Val	Gln	Leu
	50					55					60				
Ala	Met	Pro	Asp	Gly	Tyr	Gly	Ile	Arg	Gly	Phe	Val	Arg	Asp	Asn	Leu
	65				70					75					80
Pro	Val	Ile	Pro	Glu	Thr	Phe	Thr	Leu	Ile	Pro	Arg	Gln	Glu	Lys	Thr
				85					90					95	
Glu	Lys	Gly	Tyr	Lys	Pro	Asp	Ser	Gly	Val	Val	Ser	Gln	Ile	Lys	Ile
			100					105					110		
Ile	Ala	Arg	Leu	Phe	Lys	Glu	Ser	Glu	Gln	Ile	Ile	Val	Ala	Thr	Asp
		115					120					125			
Ala	Gly	Arg	Glu	Gly	Glu	Leu	Ile	Phe	Arg	Tyr	Leu	Tyr	His	Tyr	Ile
	130					135					140				
Gly	Cys	Thr	Thr	Pro	Phe	Val	Arg	Leu	Trp	Ile	Ser	Ser	Leu	Thr	Asp
	145				150				155						160
Lys	Ala	Ile	Arg	Glu	Gly	Leu	Arg	Asn	Leu	Glu	Ala	Gly	Ser	Lys	Tyr
			165						170					175	
Asp	Asn	Leu	Tyr	Leu	Thr	Ala	Lys	Ala	Arg	Ser	Glu	Ser	Asp	Trp	Leu
		180						185					190		
Val	Gly	Ile	Asn	Gly	Thr	Gln	Ala	Leu	Ser	Ile	Ala	Ala	Gly	His	Gly
		195					200					205			
Thr	Tyr	Ser	Val	Gly	Arg	Val	Gln	Thr	Pro	Thr	Leu	Ala	Met	Val	Cys
	210					215					220				
Val	Arg	Tyr	Trp	Glu	Asn	Arg	Arg	Phe	Thr	Val	Glu	Pro	Phe	Trp	Gln
	225				230				235						240
Leu	His	Ile	Ala	Thr	Asp	Gly	Gly	Asn	Gly	Glu	Val	Val	Lys	Phe	Ser
			245						250					255	
Ser	Ser	Glu	Lys	Trp	Lys	Glu	Lys	Glu	Pro	Ala	Thr	Glu	Leu	Tyr	Asn
		260						265					270		
Lys	Val	Lys	Glu	Ala	Gly	Thr	Ala	Thr	Val	Thr	Lys	Ala	Glu	Arg	Lys
	275						280					285			
Glu	Lys	Thr	Glu	Asp	Thr	Pro	Leu	Leu	Tyr	Asp	Leu	Thr	Thr	Leu	Gln
	290					295				300					
Lys	Glu	Ala	Asn	Ala	Lys	His	Gly	Phe	Thr	Ala	Glu	Gln	Thr	Leu	Glu
	305				310					315					320
Ile	Ala	Gln	Lys	Leu	Tyr	Glu	Lys	Lys	Leu	Ile	Thr	Tyr	Pro	Arg	Thr
			325						330					335	
Gly	Ser	Arg	Tyr	Ile	Pro	Glu	Asp	Val	Phe	Val	Glu	Ile	Pro	Lys	Leu

340	345	350
Leu Ala Phe Ile Gly Ser Leu Pro Glu Trp Lys Gly Lys Val Asn Pro		
355	360	365
Lys Ala Met Pro Thr Arg Arg Ser Val Asp Gly Gly Lys Val Thr Asp		
370	375	380
His His Ala Leu Leu Val Thr Gly Glu Lys Pro Leu Phe Leu Ser Lys		
385	390	395
Glu Asp Asn Thr Val Tyr Gln Met Ile Ala Gly Arg Met Ile Glu Ala		
405	410	415
Phe Ser Glu Lys Cys Val Lys Asp Thr Ala Thr Val Thr Ala Glu Cys		
420	425	430
Ala Gly Ala Glu Phe Val Ala Lys Gly Ser Ile Ile Lys Gln Ala Gly		
435	440	445
Trp Arg Ala Val Tyr Gly Glu Glu Glu Lys Glu Glu Thr Ile Ile Pro		
450	455	460
Gly Trp Gln Glu Gly Asp Thr Leu Thr Leu Lys Ala Ala Ser Ile Thr		
465	470	475
Glu Gly Lys Thr Lys Pro Lys Pro Leu His Thr Glu Ala Thr Leu Leu		
485	490	495
Ser Ala Met Glu Thr Ala Gly Lys Glu Ile Glu Asp Asp Ala Leu Arg		
500	505	510
Gln Ala Leu Lys Asp Cys Gly Ile Gly Thr Pro Ala Thr Arg Ala Ala		
515	520	525
Ile Ile Glu Thr Leu Phe Lys Arg Gly Tyr Met Glu Arg Cys Lys Lys		
530	535	540
Ser Leu Val Pro Thr Glu Lys Gly Leu Ala Leu Tyr Ser Val Val Lys		
545	550	555
Thr Met Arg Ile Ala Asp Val Ala Met Thr Gly Glu Trp Glu Lys Glu		
565	570	575
Leu Ala Arg Ile Glu Arg Gly Glu Leu Pro Ala Asp Thr Phe Arg Lys		
580	585	590
Glu Ile Glu Ala Tyr Thr Gln Glu Ile Thr Ser Glu Leu Leu Ser Cys		
595	600	605
Asp Lys Leu Phe Ala Arg Arg Asp Ser Gly Cys Lys Cys Pro Lys Cys		
610	615	620
Gly Thr Gly Ser Met Gln Phe Tyr Gly Lys Val Arg Cys Asp Asn		
625	630	635
Ala Glu Cys Gly Leu Pro Val Phe Arg Leu Lys Ala Asn Arg Thr Leu		
645	650	655
Thr Asp Asp Glu Ile Lys Asp Leu Leu Thr Asp Gly His Thr Lys Leu		
660	665	670
Leu Lys Gly Phe Lys Ser Lys Gln Gly Lys Ser Phe Asp Ala Val Val		
675	680	685
Ala Phe Asp Gly Asp Tyr Asn Thr Thr Phe Val Phe Pro Glu Arg Lys		
690	695	700
Thr Thr Lys Lys Phe Ser Gly Arg Lys Lys		
705	710	

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<212> PRT

<213> B.fragilis

<400> 6891

Phe Thr Asn Pro Leu Asn Ser Lys Val Met Asn Asn Lys Lys Lys Asn		
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Glu Gly Gln Thr Asp Phe Ser Tyr Tyr Gly Leu Tyr Leu Leu Asp Tyr		
20	25	30
Leu Arg Thr Asn Lys Phe Glu Gln Ala Thr Asp Glu Ala Phe Ile Arg		

Phe	Lys	Glu	Ser	Ser	Asp	Thr	Ile	Arg	Asp	Ile	Phe	Ser	Phe	Asn	Thr
130						135					140				
Glu	Asn	Ala	Asn	Phe	Arg	Thr	Lys	Glu	Trp	Ala	Lys	Ile	Ile	Lys	Glu
145					150					155					160
Gln	Arg	Ser	Ser	Val	Ser	Ile	His	Ile	Arg	Arg	Gly	Asp	Tyr	Thr	Ser
				165					170					175	
Ala	Lys	Asn	Lys	Ile	Lys	Tyr	Gly	Asn	Ile	Cys	Thr	Lys	Glu	Tyr	Tyr
			180					185					190		
Gln	Lys	Ala	Ile	Ser	Ile	Ile	Leu	Lys	Lys	Glu	Pro	Lys	Ala	Phe	Phe
		195					200					205			
His	Ile	Phe	Ser	Asp	Asp	Val	Glu	Trp	Thr	Lys	Ala	His	Leu	Lys	Ile
	210					215					220				
His	His	Leu	Pro	His	Gln	Tyr	Ile	Ser	Trp	Asn	Arg	Gly	Pro	Asp	Ser
225					230					235					240
Trp	Gln	Asp	Met	Met	Leu	Met	Ser	Leu	Cys	Arg	His	Asn	Ile	Ile	Ala
				245					250					255	
Asn	Ser	Ser	Phe	Ser	Trp	Trp	Gly	Ala	Trp	Leu	Asn	Ala	Tyr	Lys	Asp
			260					265					270		
Lys	Thr	Val	Ile	Ala	Pro	Ser	Arg	Trp	Ser	Asn	Val	Lys	Lys	Thr	Pro
		275					280					285			
His	Ile	Leu	Pro	Glu	Ser	Trp	Ile	Ser	Ile	Asp	Ile				
	290					295					300				

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 <212> PRT
 <213> B.fragilis

<400> 6894

Leu	Asn	Asn	Pro	His	Thr	Thr	Met	Lys	Val	Ser	Ile	Ile	Ile	Leu	Asn
1				5				10						15	
Tyr	Asn	Thr	Ser	Arg	Leu	Thr	Leu	Asn	Cys	Ile	Asn	Ser	Ile	His	Lys
			20					25					30		
Tyr	Leu	Pro	Asn	Gly	Thr	Tyr	Glu	Ile	Ile	Val	Val	Asp	Asn	Ala	Ser
		35					40					45			
Gln	Glu	Thr	Asp	Tyr	Gln	His	Leu	Thr	Glu	Asn	Leu	Ser	Gly	Gln	Glu
	50					55					60				
Ile	Thr	Ile	Ile	Arg	Asn	Lys	Ile	Asn	Ser	Gly	Phe	Gly	Ala	Gly	Asn
65					70					75					80
Met	Val	Gly	Ala	Asn	Ile	Ala	Gln	Gly	Lys	Tyr	Leu	Cys	Phe	Leu	Asn
				85					90					95	
Asn	Asp	Thr	Glu	Leu	Leu	Glu	Asp	Cys	Ile	Ser	Pro	Leu	Cys	Ser	Tyr
			100					105					110		
Leu	Lys	Glu	Asn	Pro	Gln	Thr	Gly	Cys	Ile	Thr	Pro	Gln	Gln	Tyr	Asn
		115					120						125		
Lys	His	Leu	Lys	Ala	Val	Pro	Ser	Phe	Asn	His	Pro	Ile	Gly	Ile	Leu
	130					135					140				
Tyr	Glu	Ile	Leu	Gly	Asn	Asp	Ile	Pro	Glu	Arg	Leu	Cys	Pro	Ala	Arg
145					150					155					160
Tyr	Pro	Lys	Arg	Lys	Lys	Lys	Val	Tyr	Gln	Phe	Pro	Ile	His	Ala	Ser
				165					170					175	
Trp	Ile	Asn	Gly	Ala	Phe	Met	Met	Phe	Pro	Ser	Glu	Val	Phe	Phe	Lys
			180					185					190		
Ile	Lys	Gly	Phe	Asp	Thr	Asn	Ile	Phe	Leu	Tyr	Tyr	Glu	Glu	Tyr	Asp
		195					200					205			
Ile	Cys	Thr	Arg	Leu	Ser	Tyr	His	Asn	Tyr	Gln	Ser	Thr	Val	Leu	Pro
	210					215					220				
Thr	Tyr	Arg	Phe	Leu	His	Leu	Gln	Gly	Glu	Ser	Thr	Lys	Val	Tyr	Ala
225					230					235					240

Leu Ala Tyr Lys Glu Arg Phe Ile Ser Lys Leu Tyr Val Tyr Lys Lys
 245 250 255
 His Ser Asn Phe Leu Phe Tyr Ile Ile Tyr Lys Trp Ile Ile Ile Ile
 260 265 270
 Lys Leu Cys Phe His Phe Arg Arg Trp Tyr Ile Leu Pro Thr Ile Ile
 275 280 285
 Leu Gly Lys Gly Leu Ser Gln Ser Met Arg His Lys
 290 295 300

<210> 6895

<211> 168

<212> PRT

<213> B.fragilis

<400> 6895

Lys Ala Leu Pro Glu Pro Ser Leu Glu Ser Ser Val Asp Cys Thr Leu
 1 5 10 15
 Leu Phe Cys Thr Leu Pro Asn Glu Arg Lys Lys Thr Met Gly Lys Val
 20 25 30
 Gln Ile Leu Ala Val Leu Thr Met Asp Gly Cys His Ser Ser Glu Leu
 35 40 45
 Tyr Gly Lys Ala Tyr Glu Asp Leu Arg Leu Asp Arg Cys Asp Ile Asp
 50 55 60
 Lys Ile Arg Glu Asn Ala Leu Tyr His Val Thr Pro Asp Tyr Ser Ile
 65 70 75 80
 Ser Met Leu Asp Glu Trp Arg Lys Asp Asn Thr Asn Ile Cys Tyr Leu
 85 90 95
 Ala Glu Ala Thr Pro Asp Asn Ser Asp Tyr Ile Asn Gly Leu Leu Arg
 100 105 110
 Met Arg Val Val Asp Glu Ile Ile Leu Tyr Thr Val Pro Phe Ile Ser
 115 120 125
 Gly Thr Gly Arg His Phe Phe Lys Ser Ala Leu Pro Glu Ala Arg Trp
 130 135 140
 Thr Leu Ser Ser Gln Lys Ser Tyr Ser Asn Gly Val Tyr Arg Ser Ile
 145 150 155 160
 Tyr Thr Arg Met Glu Thr Met Lys
 165

<210> 6896

<211> 1022

<212> PRT

<213> B.fragilis

<400> 6896

Ser Ser Lys Pro Asp Arg Met Lys Glu Ala Leu Thr Thr Asn Gln Val
 1 5 10 15
 Val Ile Val Leu Val Glu His Pro Val Leu Gly Leu Leu Leu Val Pro
 20 25 30
 Tyr Thr Val Gly Arg Ala Leu Asp Asn Thr Leu Glu Val Ile Glu Gln
 35 40 45
 Ala Phe His Ala Ser Pro Asp Ala Leu Lys Lys Met Asn Glu Ala Glu
 50 55 60
 Gln Lys Ala Ile Asp Ile Ala Ser His Tyr Thr Glu Lys Tyr Leu Met
 65 70 75 80
 Gly Val Tyr Ser Arg Glu Lys Thr Val Pro Lys Phe Leu Arg Lys Leu
 85 90 95
 Thr Glu Asp Ser Asn Lys Leu Lys Gln Gln Ile Arg Pro Phe Ile Glu
 100 105 110
 Lys Lys Leu Leu Glu Met Leu Glu Leu Ile Cys Asn Gly Gln Leu Pro

[illegible]

Ile	Ala	Pro	Gln	Val	Pro	Gln	Ile	Pro	Glu	Pro	Val	Gln	Lys	Gln	Asn
	595						600					605			
Arg	Ile	Ser	Pro	Leu	His	Gly	Thr	Leu	Ile	Val	Val	Pro	Thr	Ser	Leu
	610					615					620				
Leu	His	Asn	Trp	Lys	Arg	Glu	Ala	Ser	Arg	Phe	Thr	Asn	Leu	Ser	Met
625					630					635					640
Met	Glu	Tyr	Asn	Gly	Ser	Ser	Pro	Asn	Glu	Ile	Thr	Arg	Leu	Lys	Lys
			645						650					655	
Tyr	Phe	Asp	Arg	Tyr	His	Leu	Ile	Phe	Thr	Thr	Tyr	Gly	Thr	Met	Arg
			660					665					670		
Asn	Asn	Ile	Ala	Thr	Leu	Ser	Gln	Tyr	Thr	Phe	Glu	Cys	Ile	Val	Leu
		675					680					685			
Asp	Glu	Ser	Gln	Asn	Ile	Lys	Asn	Ser	Glu	Ser	Leu	Thr	Phe	Arg	Ser
	690					695					700				
Ala	Ile	Gln	Leu	Arg	Ser	Lys	His	Arg	Leu	Ile	Leu	Thr	Gly	Thr	Pro
705					710					715					720
Ile	Glu	Asn	Ser	Leu	Lys	Asp	Leu	Trp	Ala	Gln	Phe	His	Phe	Leu	Gln
				725					730					735	
Pro	Glu	Leu	Leu	Gly	Asn	Glu	Thr	Thr	Phe	Ser	Lys	His	Phe	Ile	Asn
			740					745					750		
Ala	Ile	Arg	Gln	Gly	Asp	Glu	Arg	Met	Lys	Asp	Arg	Leu	Arg	Gln	Leu
		755					760					765			
Ile	Thr	Pro	Phe	Ile	Leu	Arg	Arg	Ser	Lys	Gln	Glu	Val	Thr	Pro	Glu
	770					775					780				
Leu	Pro	Ser	Leu	Thr	Glu	Glu	Val	Val	Tyr	Cys	Asp	Met	Thr	Glu	Arg
785					790					795					800
Gln	Asn	Glu	Leu	Tyr	Gln	His	Glu	Lys	Asn	Ser	Leu	Arg	Asn	Ile	Leu
				805					810					815	
Leu	Glu	Gln	Thr	Ala	Glu	Lys	Gly	Gln	Gln	Ser	Phe	Thr	Val	Leu	Asn
			820					825					830		
Gly	Ile	Leu	Arg	Leu	Arg	Gln	Leu	Ser	Cys	His	Pro	Gln	Leu	Val	Leu
		835					840					845			
Pro	Asp	Phe	Ile	Gly	Asp	Ser	Gly	Lys	Leu	Tyr	Gln	Ile	Ile	Glu	Thr
	850					855					860				
Phe	Glu	Thr	Leu	Arg	Ser	Glu	Gly	His	Lys	Val	Leu	Ile	Phe	Ser	Ser
865					870					875					880
Phe	Val	Lys	His	Leu	Glu	Leu	Val	Ala	Gly	Glu	Phe	Arg	Lys	Arg	Lys
			885						890					895	
Trp	Asp	Tyr	Ala	Phe	Leu	Thr	Gly	Ser	Ser	Thr	Asn	Arg	Pro	Glu	Glu
			900					905					910		
Ile	Ala	Arg	Phe	Asn	Arg	Asp	Pro	Lys	Ile	Gln	Ala	Phe	Leu	Ile	Ser
		915					920					925			
Leu	Lys	Ala	Gly	Gly	Val	Gly	Leu	Asn	Leu	Thr	Gln	Ala	Asp	Tyr	Val
	930					935					940				
Phe	Ile	Ile	Asp	Pro	Trp	Trp	Asn	Pro	Ala	Ala	Glu	Ser	Gln	Ala	Ile
945					950					955					960
Ala	Arg	Ala	His	Arg	Ile	Gly	Gln	Asn	Asn	Gln	Val	Ile	Ala	Tyr	Arg
			965						970					975	
Phe	Ile	Thr	Gln	Gly	Ser	Ile	Glu	Glu	Lys	Ile	Ile	Gln	Leu	Gln	Glu
			980					985					990		
Glu	Lys	Arg	Lys	Leu	Ala	Glu	Thr	Phe	Ile	Thr	Asp	Thr	Glu	Gln	Leu
		995					1000					1005			
Pro	Ala	Leu	Thr	Asn	Arg	Glu	Trp	Ala	Arg	Leu	Leu	Gly	Ser		
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<210> 6897

<211> 388

<212> PRT

<213> B.fragilis

<400> 6897

Lys Pro Asp Thr Arg Ser Cys Phe Ile Arg Thr Glu Ile Glu Asn Asn
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 20 25 30
 Lys Ser Lys Val Met Arg Lys Val Ile Ile Met Phe Ala Leu Ala Met
 35 40 45
 Asp Ile Val Thr Ala Asn Ala Gln Glu Asn Val Thr Val Gly Thr Asp
 50 55 60
 Asn Gly Ser Glu Pro Thr Asn Glu Ala Arg Ala Glu Ala Ser Ser Leu
 65 70 75 80
 Asp Tyr Ala Ser Gln Gly Gly Gly Arg Gln Ser Gln Gln Pro Thr Leu
 85 90 95
 Thr Lys Glu Val Tyr Pro Gln Lys Lys Ala Asp Gly Asp Leu Tyr His
 100 105 110
 Gly Leu Thr Lys Lys Leu Thr Phe Asp Arg Met Val Pro Pro His Gly
 115 120 125
 Leu Glu Val Thr Tyr Asp Lys Thr Val His Val Ile Phe Pro Ser Glu
 130 135 140
 Val Arg Tyr Val Asp Leu Gly Ser Pro Asp Leu Ile Ala Gly Lys Ala
 145 150 155 160
 Asp Gly Ala Glu Asn Val Ile Arg Val Lys Ala Thr Val Arg Asn Phe
 165 170 175
 Pro Asn Glu Thr Asn Met Ser Val Ile Thr Glu Asp Gly Ser Phe Tyr
 180 185 190
 Thr Phe Asn Val Lys Tyr Ala Ala Glu Pro Leu Leu Leu Asn Val Glu
 195 200 205
 Met Cys Asp Phe Ile His Asp Gly Glu Lys Val Asn Cys Pro Asn Asn
 210 215 220
 Ala Gln Glu Ile Tyr Leu Lys Glu Leu Gly Ser Glu Ser Pro Met Leu
 225 230 235 240
 Val Arg Leu Ile Met Lys Ser Ile His Lys Gln Asn Lys Arg Glu Val
 245 250 255
 Lys His Ile Gly Cys Lys Arg Phe Gly Ile Gln Tyr Leu Leu Lys Gly
 260 265 270
 Ile Tyr Thr His Asn Gly Leu Leu Tyr Phe His Thr Glu Ile Lys Asn
 275 280 285
 Gln Ser Asn Val Pro Phe Asp Val Asp Tyr Ile Thr Trp Lys Ile Val
 290 295 300
 Asp Lys Lys Val Ala Lys Arg Thr Ala Val Gln Glu Gln Ile Ile Leu
 305 310 315 320
 Pro Leu Arg Ala Gln Asn Tyr Ala Thr Leu Val Pro Gly Lys Lys Ser
 325 330 335
 Glu Arg Thr Val Phe Thr Met Ala Lys Phe Thr Ile Pro Asp Asp Lys
 340 345 350
 Cys Leu Val Val Glu Leu Asn Glu Lys Asn Gly Gly Arg His Gln Ser
 355 360 365
 Phe Val Ile Glu Asn Glu Asp Leu Val Arg Ala Asn Thr Ile Asn Glu
 370 375 380
 Leu Gln Val Arg
 385

<210> 6898

<211> 416

<212> PRT

<213> B.fragilis

<400> 6898

Tyr Ala Val Thr Ile Asp Met Thr Lys Lys Trp Gln Tyr Leu Cys Arg
 1 5 10 15
 Cys Leu Leu Val Leu Val Phe Ile Gly Gly Val Ile Pro Ala Lys Ala
 20 25 30
 Gln Leu Val Glu Arg Val Cys Arg Thr Asp Tyr Lys Ile Ser Pro Glu
 35 40 45
 Arg Lys Gly Glu Leu Leu Leu Glu Leu Asp Asn Ile Ser Phe Phe Lys
 50 55 60
 Asp Asn Glu Phe Ala Gly Thr Val Ile Lys Gly Tyr Ser Leu Pro Gly
 65 70 75 80
 Leu Trp Ile Gln Pro Lys Phe Val Tyr Tyr Pro Leu Lys Asn Ile Lys
 85 90 95
 Leu Glu Gly Gly Val His Met Leu Trp Phe Ser Gly Ala Tyr Arg Tyr
 100 105 110
 Pro Ser Val Ser Tyr Gln Asp Ile Ala Leu Trp Lys Gly Glu Gln Tyr
 115 120 125
 Gln Lys Gly Ala His Leu Leu Pro Phe Phe Arg Ala Gln Ile Ser Met
 130 135 140
 Lys Ser Val Asp Leu Ile Leu Gly Asn Ile Tyr Gly Gly Ser Asn His
 145 150 155 160
 Gly Leu Ile Ala Pro Leu Tyr Asn Pro Glu Leu Asn Leu Thr Ala Asp
 165 170 175
 Pro Glu Thr Gly Phe Gln Val Leu Ala Gly Ala Pro Trp Ile Asp Leu
 180 185 190
 Asp Ala Trp Ile Asp Trp Gln Ser Phe Ile Phe Arg Asp Asp Thr His
 195 200 205
 Gln Glu Ala Phe Thr Val Gly Leu Ser Thr Arg Phe Lys Leu Asn Ala
 210 215 220
 Pro Ser Ser Thr Phe His Cys Tyr Ile Pro Leu Gln Ile Leu Ala Gln
 225 230 235 240
 His Arg Gly Gly Glu Ile Asp Thr Ile Arg Glu Ser Ser Val Gln Thr
 245 250 255
 Leu Met Asn Gly Ala Val Gly Ala Gly Val Thr Trp Asn Ile Asp Arg
 260 265 270
 Arg Ile Leu Lys Arg Val Asn Val Glu Leu Asp Ala Ala Gly Tyr Tyr
 275 280 285
 Gln Gln Lys Gly Glu Leu Trp Pro Tyr His Lys Gly Ile Gly Val Tyr
 290 295 300
 Ser Ser Ala Phe Val Asp Leu Gly Asn Phe Arg Val Lys Met Gly His
 305 310 315 320
 Trp Ile Cys Asn Asp Phe Ile Thr Met Phe Gly Ile Pro Tyr Phe Gly
 325 330 335
 Thr Val Ser Thr Lys Lys Glu Gly Ile Thr Tyr Asp Lys Pro Gln Thr
 340 345 350
 Leu Leu Cys Ser Ile Glu Tyr Ser Arg Met Phe Gly Lys His Tyr Ala
 355 360 365
 Leu Gly Leu Lys Ala Asp Ala Tyr Gln Phe Phe Pro Gly Thr Met Arg
 370 375 380
 Ser Ala Asn Gly Glu Leu Thr Ser Pro Gly Ser Thr Thr Ser Phe Ser
 385 390 395 400
 Val Gly Val Tyr Phe Arg Ile Asn Pro Ser Phe Leu Leu Lys Asn Phe
 405 410 415

<210> 6899

<211> 427

<212> PRT

<213> B.fragilis

<400> 6899

Asn Cys Gly Thr Phe Lys Arg Asn Ala Gly Lys Met Val Ala Lys Ile
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 Ser Val Gly Asn Ser Leu Tyr Gly Ala Leu Ala Tyr Asn Gly Glu Lys
 20 25 30
 Ile Asn Glu Ala Lys Gly Arg Leu Leu Thr Thr Asn Arg Ile Tyr Asn
 35 40 45
 Asp Gly Thr Gly Thr Met Glu Ile His Arg Ala Met Glu Asp Phe Leu
 50 55 60
 Ala Leu Met Pro Val Arg Ser Lys Val Glu Lys Pro Val Val His Ile
 65 70 75 80
 Ser Leu Asn Pro His Pro Asp Asp Ile Leu Thr Asp Thr Glu Leu Gln
 85 90 95
 Asn Ile Ala Arg Glu Tyr Leu Glu Lys Met Gly Phe Gly Asn Gln Pro
 100 105 110
 Tyr Leu Val Phe Lys His Glu Asp Ile Asp Arg His His Leu His Ile
 115 120 125
 Val Thr Val Arg Val Asp Glu Asn Gly Arg Ser Ile Asp Thr Arg Asn
 130 135 140
 Asn Phe Tyr Arg Ser Lys Gln Ile Thr Arg Glu Leu Glu Arg Lys Tyr
 145 150 155 160
 Gly Leu His Asp Ala Glu Arg Lys Asn Arg Arg Leu Asp Thr Pro Leu
 165 170 175
 His Lys Val Asp Ala Ser Ala Gly Asp Val Lys Lys Gln Ala Gly Asn
 180 185 190
 Ile Val Lys Ala Ile Ser Gly Gln Tyr Arg Phe Gln Thr Met Gly Glu
 195 200 205
 Tyr Arg Ala Leu Leu Ser Leu Tyr Asn Met Thr Val Glu Glu Ala His
 210 215 220
 Gly Asn Val Arg Gly Arg Glu Tyr His Gly Leu Val Tyr Ser Val Thr
 225 230 235 240
 Asp Asp Lys Gly Asn Lys Val Gly Asn Pro Phe Lys Ser Ser Leu Phe
 245 250 255
 Gly Lys Ser Val Gly Tyr Glu Ala Val Gln Lys Lys Phe Ala Arg Ser
 260 265 270
 Lys Gln Glu Ile Lys Asp Arg Lys Leu Ala Asp Met Thr Lys Arg Thr
 275 280 285
 Val Leu Ser Val Leu Glu Gly Thr Tyr Asp Lys Glu Lys Phe Val Ala
 290 295 300
 Thr Leu Lys Gly Lys Gly Ile Asp Thr Val Leu Arg Tyr Thr Glu Glu
 305 310 315 320
 Gly Arg Ile Tyr Gly Ala Thr Phe Ile Asp His Arg Thr Gly Cys Val
 325 330 335
 Leu Asn Gly Ser Arg Met Gly Lys Glu Leu Ser Ala Asn Ala Leu Gln
 340 345 350
 Glu His Phe Thr Leu Pro Tyr Ala Gly Gln Pro Pro Ile Pro Ile Ser
 355 360 365
 Val Pro Val Glu Glu Pro Glu Asn Arg Gln Gly Tyr Ser Gly Gly Glu
 370 375 380
 Tyr Glu Ser His Ser Ser Gly Met Asn Leu Phe Ala Pro Glu Gly Ser
 385 390 395 400
 Ala Val Asp Ala Glu Glu Ala Phe Ile Arg Ala Met Gln Arg Lys
 405 410 415
 Lys Lys Lys Lys Lys Arg Lys Gly Leu Gly Thr
 420 425

<210> 6900

<211> 837

<212> PRT

<213> B.fragilis

<400> 6900

Asn Asp Gln Thr Ile Met Glu Thr Leu Lys Glu Lys Phe Glu Ala Leu
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 Ala His Arg Ile Gln Ser Ser Gly Lys Pro Ala Ala Ala Trp Phe Pro
 20 25 30
 Gln Phe Thr Pro Val Thr Leu Leu Asn Ala Glu Asn Trp Trp Glu Ala
 35 40 45
 Leu Ala Val Cys Glu Tyr Ala Leu Asp Thr His Glu Asp Glu Ala Leu
 50 55 60
 Thr Ala Gly Phe Phe Glu Leu Ile Phe Ser Ala Tyr Asp Cys Asn Val
 65 70 75 80
 Glu Val Asp Leu Asn Glu Glu Glu Tyr Ala Tyr Trp Trp Glu Lys Val
 85 90 95
 Ile Ser Val Cys Asp Arg Val Ala Val Phe Asn Gly Ala Gly Trp Ser
 100 105 110
 Gln Lys Gly Ala Gln Tyr Ser Glu Ala Arg Tyr Gly Lys Arg Asp Leu
 115 120 125
 Ser Leu Leu Phe Pro Cys Tyr Glu Lys Ala Ala Glu Met Gly Ser Pro
 130 135 140
 Glu Ala Glu Ala Thr Val Ala Tyr Trp Arg Tyr Met Gly Phe Tyr Cys
 145 150 155 160
 Glu Gln Asp Arg Ala Glu Gly Glu Arg Arg Phe Ala Ala Leu Ser Ser
 165 170 175
 Pro Glu Ala Leu Leu Trp Gly Lys Tyr Arg Ala Tyr Ala Glu Gln
 180 185 190
 His Thr Gly Ser Lys Glu Lys Ala Leu Leu Met Arg Lys Glu Leu Leu
 195 200 205
 Asp Glu Leu Pro Glu Ser His Arg Leu Arg Ala His Val Tyr Ala Ala
 210 215 220
 Met Gly Asp Ala Leu Asp Ile Glu Glu Gly Ser Val Ala Glu Glu Ala
 225 230 235 240
 Ala Cys Tyr Glu Lys Ser Leu Glu Leu Val Pro Asn Leu Tyr Ser Leu
 245 250 255
 Lys Asn Leu Ala Thr Leu Tyr Phe Arg Tyr Pro Glu Leu Gly Lys Gln
 260 265 270
 Lys Glu Leu Ala Phe Glu Leu Trp Glu Lys Ala Trp His Ala Gly Val
 275 280 285
 Trp Ser Ala Ala Asn Phe Leu Gly Tyr Asn Tyr Gln Glu Glu Glu Trp
 290 295 300
 Leu Asp Met Pro Lys Ala Ile Glu Trp Leu Glu Lys Gly Met Leu Tyr
 305 310 315 320
 Cys Glu Ser Tyr Cys Ala Tyr Glu Leu Ala Leu Ile Tyr Leu Tyr Asn
 325 330 335
 Asp Glu Tyr Lys Asn Val Glu Arg Gly Leu Met Cys Leu Gln Arg Cys
 340 345 350
 Val Asp Asp Asn Tyr Val Glu Ala Ile Glu Thr Leu Ala Asn Val Tyr
 355 360 365
 Phe Asn Gly Glu Leu Val Glu Glu Asn Ile Ser Tyr Ala Cys Gln Leu
 370 375 380
 Leu Glu Arg Ala Ile Glu Leu Gly Ser Gly Ser Ala Ala Tyr Arg Ile
 385 390 395 400
 Gly Trp Met Tyr Glu Arg Gly Leu Leu Ser Glu Glu Pro Asp Tyr Gln
 405 410 415
 Lys Ala Met Glu Tyr Tyr Glu Lys Ala Val Ser Met Asp Asn Ala Asp
 420 425 430
 Gly Tyr Ala Arg Ala Ala Leu Tyr Leu Ala Asn Gly Tyr Ser Gly Val
 435 440 445
 Thr Asp Ala Gly Lys Ser Lys Ala Tyr Tyr Glu Lys Ala Ala Glu Leu

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

450	455	460
Gly Ser Cys Phe Ala Met Val Glu Leu Ala Phe Leu Tyr Glu Asn Gly		
465	470	475
Glu Val Val Glu Gln Ser Tyr Glu Lys Ala Phe Asp Leu Leu Gln Lys		
	485	490
Ala Ala Gly Gln Glu Tyr Pro Tyr Ala Met Tyr Arg Val Gly Leu Tyr		
	500	505
Leu Asp Arg Gly Val Ile Gly Glu Pro Arg Pro Glu Glu Ala Phe Ala		
	515	520
Trp Tyr Ala Lys Ala Ala Glu Arg Gly Asp Gly Asp Ala Ile Phe Ala		
	530	535
Leu Gly Arg Cys Tyr Lys Asn Gly Ile Gly Thr Glu Glu Asn Pro Asp		
545	550	555
Lys Ala Leu Glu Trp Phe Thr Lys Gly Ala Glu Asn Asn Glu Pro Arg		
	565	570
Cys Leu Thr Glu Met Gly Leu Ala Tyr Glu Tyr Gly Ser Gly Ile Glu		
	580	585
Glu Asn Pro His Gln Ala Val Glu Tyr Met Thr Lys Ala Ala Glu Gln		
	595	600
Asn Tyr Gly Tyr Ala Gln Phe Lys Met Gly Asp Tyr Phe Phe Phe Gly		
610	615	620
Tyr Gly Ala Cys Pro Glu Asp Asn Lys Gln Ala Val Glu Trp Tyr Glu		
625	630	635
Lys Ala Val Ala Asn Asp Ile Pro Leu Ala Met Leu Arg Met Gly Glu		
	645	650
Tyr Tyr Leu Tyr Asp Tyr Asp Lys Leu Asn Glu Ser Glu Lys Ala Phe		
	660	665
Ser Tyr Phe Lys Lys Ala Ala Glu Ala Glu Cys Tyr Asn Glu Gly Leu		
	675	680
Gly Ile Cys Tyr Glu Met Gly Ile Gly Val Glu Asp Asn Glu Thr Glu		
	690	695
Ala Phe Lys Tyr Tyr Thr Leu Ala Ala Gly Ser Gly Asn Val Met Ser		
705	710	715
Met Tyr Arg Thr Gly Leu Cys Tyr Tyr Asn Gly Val Gly Val Lys Gln		
	725	730
Asn Tyr Thr Glu Ala Tyr Arg Trp Phe Asn Asp Ala Ala Gly Asn Asp		
	740	745
Asn Val Ala Ser Tyr Tyr Tyr Leu Gly Lys Met Leu Met Tyr Gly Glu		
	755	760
Gly Cys Val Pro Asp Ala Glu Ala Gly Leu Gln Trp Leu Met Lys Ala		
	770	775
Ala Glu His Asn Ser Asp Lys Ala Gln Phe Glu Leu Gly Asn Ala Tyr		
785	790	795
Leu Met Gly Asn Gly Val Glu Glu Asn Asp Glu Ile Ala Met Glu Trp		
	805	810
Phe Glu Lys Ala Ala Glu Asn Gly Asn Ala Lys Ala Leu Lys Ile Thr		
	820	825
Gly Arg Arg Gln Arg		830
835		

<210> 6901

<211> 103

<212> PRT

<213> B.fragilis

<400> 6901

His Lys Thr Ala Arg Arg Phe Glu Arg Lys Ser Gly Lys Leu Thr Leu
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Arg Arg Arg Leu Arg Asp Ala Tyr Ala Met Pro Thr His Ser Val His

[illegible]

<400> 6902

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<210> 6903
<211> 1951
<212> PRT
<213> B.fragilis
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<400> 6903

Arg	Asn	Met	Ala	Phe	Asn	Arg	Lys	Gln	Arg	Leu	Arg	Asp	Asn	Ile	Glu
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Ala	Ile	Arg	Thr	Ala	Phe	Val	Leu	Asp	Arg	Glu	Gln	Arg	Thr	Pro	Thr
			20					25					30		
Ala	Arg	Glu	Arg	Leu	Leu	Leu	Glu	Arg	Tyr	Cys	Gly	Phe	Gly	Gly	Leu
		35					40					45			
Lys	Cys	Ile	Leu	Asn	Pro	Ala	Lys	Glu	Leu	Thr	Asp	Ala	Val	His	Trp
	50					55					60				
Ala	Lys	Ser	Asp	Leu	Glu	Leu	Phe	Ala	Pro	Thr	Val	Glu	Leu	His	Lys
65					70					75					80
Leu	Leu	Arg	Glu	Asn	Thr	Lys	Asp	Asp	Thr	Glu	Tyr	Lys	Gln	Cys	Met
				85					90					95	
Asp	Ala	Met	Lys	Gln	Ser	Val	Leu	Thr	Ala	Phe	Tyr	Thr	Pro	Pro	Glu
			100						105					110	
Ile	Thr	Gly	Thr	Ile	Ala	Asp	Val	Leu	His	Glu	His	Gly	Ile	Arg	Pro
		115					120						125		
Asp	Arg	Val	Leu	Glu	Pro	Ser	Ala	Gly	Val	Gly	Ala	Phe	Val	Asp	Ala
	130					135						140			
Val	Leu	Glu	Asn	Lys	Pro	Asp	Ala	Asp	Ile	Met	Ala	Phe	Glu	Lys	Asp
145					150					155					160
Leu	Met	Thr	Gly	Lys	Ile	Leu	Arg	His	Leu	His	Pro	Asp	Gln	Lys	Val
				165					170					175	
Arg	Ile	Gln	Gly	Tyr	Glu	Lys	Ile	Glu	Lys	Pro	Phe	Met	Asn	His	Phe
			180					185						190	
Asp	Leu	Ala	Ile	Ser	Asn	Ile	Pro	Phe	Gly	Asp	Val	Ala	Val	Phe	Asp
		195					200					205			
Pro	Glu	Phe	Thr	Asn	Ser	His	Asp	Pro	Ala	Arg	His	Ser	Ala	Ala	Arg
	210					215						220			
Thr	Ile	His	Asn	Tyr	Phe	Phe	Leu	Lys	Ser	Leu	Asp	Ala	Val	Arg	Glu
225					230					235					240
Gly	Gly	Ile	Val	Ala	Phe	Ile	Thr	Ser	Gln	Gly	Val	Leu	Asp	Ala	Pro
				245					250					255	
Thr	Asn	Glu	Pro	Ile	Arg	Glu	Tyr	Met	Met	Asn	His	Ala	Asn	Leu	Val
			260					265					270		
Gly	Val	Ala	Arg	Leu	Pro	Asn	Asn	Leu	Phe	Thr	Glu	Asn	Ala	Gly	Thr
		275					280					285			
Glu	Val	Gly	Ser	Asp	Leu	Ile	Ile	Leu	Gln	Lys	Asn	Ser	Gly	Lys	Asn
	290					295					300				
Gly	Glu	Leu	Tyr	Tyr	Asn	Glu	Lys	Leu	Phe	Val	Gln	Thr	Glu	Gln	Thr
305					310					315					320
Pro	Ile	Gly	Thr	Ser	Val	Asn	Gly	Tyr	Val	Trp	Ser	Ile	Gly	Ser	Leu
				325					330					335	
Ser	His	Thr	Asp	Leu	Thr	Lys	Ser	Thr	Asp	Pro	Tyr	Gly	Lys	Pro	Ala
			340					345					350		
Tyr	Lys	Leu	Met	His	Arg	Gly	Asp	Thr	Val	Gln	Leu	Ala	Glu	Asp	Leu
	355						360					365			
Arg	Glu	His	Leu	Lys	Ile	Glu	Leu	His	Gln	Leu	Asp	Arg	Glu	Leu	Tyr
	370					375					380				
Glu	Lys	His	Ser	Leu	His	Ser	Ala	Gln	Val	Glu	Ser	Thr	Asp	Lys	Ser
385					390					395					400
Thr	Pro	Glu	Glu	Val	Gln	Pro	Ser	Pro	Lys	Val	Glu	Ala	Val	Thr	Ser
				405					410					415	
Thr	Ala	Asn	Val	Phe	Ile	Thr	Glu	Ala	Glu	Lys	Pro	Lys	Val	Gln	Pro
			420					425					430		
Ile	Asp	Glu	Lys	Pro	Glu	Ile	Glu	Pro	Arg	Gln	Thr	Asn	His	Ser	Asn
	435						440					445			
Ala	Val	Gln	Leu	Thr	Leu	Leu	Asp	Leu	Trp	Gly	Met	Pro	Ile	Glu	Glu

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450	455	460
Pro Ala Lys Lys Lys Lys	Ala Thr Lys Lys Glu	Asn Lys Ala Lys Ser
465	470	475
Val Pro Ser Lys Pro Lys	Pro Gln Val Thr Ala	Ala Pro Pro Ile Glu
	485	490
Ser Val Lys Pro Ala Thr	Glu Ser Lys Glu Ala	Lys Pro Glu Asn Ala
	500	505
Gly Arg Gln Ser Asp Pro	Glu Asp Ile Tyr Ala	Thr Leu Asp Trp Glu
	515	520
Thr Asn Pro Pro Ile Asn	Gly Phe Tyr Glu Thr	Met Met Ser Leu Thr
	530	535
Pro Glu Arg Arg Lys Ala	Leu Arg Leu Glu Ala	Glu Arg His Arg Gln
545	550	555
Glu Gln Leu Lys Lys Ser	Gly Val Lys Asp Thr	Leu Asn Pro Ala Phe
	565	570
Val Pro Ser Ser Gly Asn	Gln Ala Glu Gln Lys	Glu Ala Ala Lys Gln
	580	585
Pro Lys Ala Gln Pro Glu	Ala Thr Pro Val Pro	Val Thr Asp Asn Ser
	595	600
Gln Ser Glu Lys Ala Thr	Thr Ser Leu Phe Pro	Glu Phe Glu Thr Gly
610	615	620
Lys Pro Lys Glu Glu Val	Pro Asp Leu Thr Ser	Arg Pro Tyr His Arg
625	630	635
Thr Pro Glu Met His Leu	Arg Glu Gly Ser Leu	Val Ala Asn Arg Ala
	645	650
Arg Asp Ile Gly Tyr Leu	Lys Asp Ile Thr Pro	Tyr Gly Ala Thr Phe
	660	665
Gln Pro Leu Gly Leu Thr	Gly Tyr Gln Lys Glu	Lys Ala Leu Leu Tyr
	675	680
Val Ser Leu Arg Asp Ala	Tyr Glu Arg Leu Tyr	Arg Tyr Glu Ser Asn
690	695	700
Arg His Glu Ala Asn Val	Pro Trp Arg Glu His	Leu Asn Thr Cys Tyr
705	710	715
Asp Glu Phe Val Met Arg	Tyr Gly Asn Leu Asn	Ala Lys Gln Asn Val
	725	730
Lys Leu Val Met Met Asp	Ala Gly Gly Arg Asp	Ile Leu Ser Leu Glu
	740	745
Arg Ala Glu Asn Gly Lys	Phe Val Lys Ala Asp	Ile Phe Glu Arg Pro
	755	760
Val Ser Phe Ser Val Glu	Ser His Ala Asn Val	Gly Ser Pro Glu Glu
770	775	780
Ala Leu Ser Ala Ser Leu	Asn Lys Phe Gly Thr	Val Asp Leu Asp Tyr
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Met Arg Glu Ile Thr Asp	Ser Thr Ala Glu Asp	Leu Leu Thr Ala Leu
	805	810
Gln Gly Arg Ile Tyr Tyr	Asn Pro Leu Val Thr	Gly Tyr Glu Ile Lys
	820	825
Asp Arg Phe Ile Ala Gly	Asn Val Ile Glu Lys	Ala Glu Arg Ile Glu
	835	840
Ala Trp Met Gly Glu Asn	Pro Glu Ser Glu Arg	Met Pro Glu Val Lys
850	855	860
Gln Ala Leu Glu Ala Leu	Lys Asp Ala Glu Pro	Pro Arg Ile Ala Phe
865	870	875
Glu Asp Leu Asp Phe Asn	Phe Gly Glu Arg Trp	Ile Pro Thr Gly Val
	885	890
Tyr Ala Ala Tyr Met Ser	Arg Leu Phe Asp Thr	Glu Val Lys Ile Ala
	900	905
Tyr Ser Ala Ser Met Asp	Glu Phe Ser Val Ala	Cys Gly Tyr Arg Thr
915	920	925

Met	Lys	Ile	Thr	Asp	Glu	Phe	Leu	Val	Lys	Gly	Tyr	Arg	Asn	Tyr	
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Asp	Gly	Met	His	Leu	Leu	Lys	His	Ala	Leu	His	Asn	Thr	Cys	Pro	Asp
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Met	Met	Lys	Ser	Ile	Gly	Arg	Asp	Glu	His	Gly	Asn	Asp	Ile	Lys	Val
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Arg	Asp	Ser	Glu	Gly	Ile	Gln	Leu	Ala	Asn	Ala	Lys	Ile	Asp	Glu	Ile
			980					985					990		
Arg	Asn	Gly	Phe	Ser	Glu	Trp	Leu	Glu	Glu	Gln	Ser	Pro	Gln	Phe	Lys
		995				1000						1005			
Glu	Arg	Leu	Thr	Thr	Met	Tyr	Asn	Arg	Lys	Phe	Asn	Cys	Phe	Val	Arg
1010						1015						1020			
Pro	Lys	Tyr	Asp	Gly	Ser	His	Gln	Thr	Phe	Pro	Asp	Leu	Asn	Leu	Lys
1025					1030					1035					1040
Gly	Leu	Ala	Ser	Arg	Gly	Ile	Arg	Ser	Val	Tyr	Pro	Ser	Gln	Met	Asp
				1045					1050					1055	
Cys	Val	Trp	Met	Leu	Lys	Gln	Asn	Gly	Gly	Gly	Ile	Cys	Asp	His	Glu
			1060					1065					1070		
Val	Gly	Thr	Gly	Lys	Thr	Leu	Ile	Met	Cys	Ile	Ala	Ala	His	Glu	Met
		1075					1080					1085			
Lys	Arg	Leu	Asn	Leu	Ala	His	Lys	Pro	Met	Ile	Ile	Gly	Leu	Lys	Ala
1090						1095						1100			
Asn	Val	Ala	Glu	Ile	Ala	Ala	Thr	Tyr	Gln	Ala	Ala	Tyr	Pro	Asn	Ala
1105					1110					1115					1120
Arg	Ile	Leu	Tyr	Ala	Ser	Glu	Lys	Asp	Phe	Ser	Thr	Ala	Asn	Arg	Val
				1125					1130					1135	
Arg	Phe	Phe	Asn	Asn	Ile	Lys	Asn	Asn	Asp	Tyr	Asp	Cys	Val	Ile	Met
			1140					1145					1150		
Ser	His	Asp	Gln	Phe	Gly	Lys	Ile	Pro	Gln	Ser	Pro	Glu	Leu	Gln	Gln
		1155					1160					1165			
Arg	Ile	Leu	Gln	Ala	Glu	Leu	Asp	Thr	Val	Glu	Glu	Asn	Leu	Glu	Val
		1170					1175					1180			
Leu	Arg	Gln	Gln	Gly	Lys	Asn	Val	Ser	Arg	Ala	Met	Leu	Lys	Gly	Leu
1185					1190					1195					1200
Glu	Lys	Arg	Lys	His	Asn	Leu	Glu	Ala	Lys	Leu	Glu	Lys	Val	Glu	His
				1205					1210					1215	
Ala	Ile	Lys	Ser	Arg	Thr	Asp	Asp	Val	Val	Asp	Phe	Lys	Gln	Met	Gly
			1220					1225					1230		
Ile	Asp	His	Ile	Phe	Ile	Asp	Glu	Ser	His	Gln	Phe	Lys	Asn	Leu	Thr
		1235					1240					1245			
Phe	Asn	Thr	Arg	His	Asp	Arg	Val	Ala	Gly	Leu	Gly	Asn	Ser	Glu	Gly
		1250				1255					1260				
Ser	Gln	Lys	Ala	Leu	Asn	Met	Leu	Phe	Ala	Ile	Arg	Thr	Ile	Gln	Glu
1265					1270										

1395	1400	1405
Thr Gly Asp Ala Thr Leu Leu Gly Arg Leu Pro Leu Ser Glu Thr Glu		
1410	1415	1420
Glu Lys Ala Lys Met Leu Ile Ala Thr Asp Tyr Ala Arg Lys Met Ala		
1425	1430	1435
Leu Asp Met Arg Met Ile Asp Pro His Tyr Glu Asp His Pro Asp Asn		
1445	1450	1455
Lys Ala Ser His Cys Ala Lys Ile Ile Ala Glu Tyr Tyr Gln Lys Tyr		
1460	1465	1470
Asp Ala Gln Lys Gly Thr Gln Phe Val Phe Ser Asp Leu Gly Thr Tyr		
1475	1480	1485
Gln Pro Gly Asp Gly Trp Asn Val Tyr Ser Glu Ile Lys Arg Lys Leu		
1490	1495	1500
Thr Glu Asp Tyr Gly Ile Pro Pro Ser Glu Val Arg Phe Ile Gln Glu		
1505	1510	1515
Cys Lys Thr Asp Lys Ala Arg Lys Ala Val Ile Asp Ala Met Asn Ala		
1525	1530	1535
Gly Thr Val Arg Val Leu Phe Gly Ser Thr Ser Met Leu Gly Thr Gly		
1540	1545	1550
Val Asn Ala Gln Lys Arg Cys Val Ala Ile His His Leu Asp Thr Pro		
1555	1560	1565
Trp Arg Pro Ser Asp Leu Gln Gln Arg Asp Gly Arg Gly Val Arg Ala		
1570	1575	1580
Gly Asn Glu Ile Ala Lys His Phe Ala Gly Asn Asn Val Asp Val Ile		
1585	1590	1595
Ile Tyr Ala Val Glu Lys Ser Leu Asp Ser Tyr Lys Phe Asn Leu Leu		
1605	1610	1615
His Cys Lys Gln Thr Phe Ile Ser Gln Leu Lys Ser Gly Ala Met Glu		
1620	1625	1630
Ala Arg Thr Ile Asp Glu Gly Ala Met Asp Glu Lys Ser Gly Met Asn		
1635	1640	1645
Phe Ser Glu Tyr Met Ala Leu Leu Ser Gly Asn Thr Asp Leu Leu Asp		
1650	1655	1660
Lys Ala Lys Leu Glu Lys Arg Ile Ala Ser Leu Glu Gly Glu Arg Lys		
1665	1670	1675
Ser Phe Asn Lys Gly Lys Arg Asp Ser Glu Phe Lys Leu Glu Ser Lys		
1685	1690	1695
Thr Arg Glu Leu Gly Asn Asn Thr Ala Phe Ile Asp Ala Met Thr Glu		
1700	1705	1710
Asp Trp Asn Arg Phe Leu Ser Val Val Gln Thr Asp Lys Glu Gly Asn		
1715	1720	1725
His Leu Asn Ile Ile Lys Val Asp Gly Val Asp Ser Ala Asp Glu Lys		
1730	1735	1740
Val Ile Gly Lys Arg Leu Gln Glu Ile Ala Lys Asn Ala Thr Thr Gly		
1745	1750	1755
Gly Leu Tyr Thr Gln Val Gly Glu Phe Tyr Gly Phe Pro Ile Lys Val		
1765	1770	1775
Val Ser Glu Arg Ile Leu Lys Glu Gly Leu Glu Phe Thr Asp Asn Arg		
1780	1785	1790
Phe Val Val Glu Gly Asn Tyr Lys Tyr Thr Tyr Asn Asn Gly His Leu		
1795	1800	1805
Ala Leu Ala Asp Pro Leu Ala Ala Ala Arg Asn Phe Leu Asn Ala Ile		
1810	1815	1820
Glu Arg Ile Pro Ser Ile Ile Asp Gln Tyr Lys Ala Lys Asn Glu Val		
1825	1830	1835
Leu Glu Arg Glu Ile Pro Gln Leu Gln Glu Ile Ala Gly Lys Val Trp		
1845	1850	1855
Lys Lys Glu Glu Glu Leu Lys Gln Leu Lys Ser Glu Leu Ala Ala Leu		
1860	1865	1870

1395 1400 1405
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1845 1850 1855
1860 1865 1870

Asp Arg Lys Ile Gln Leu Glu Leu Ala Pro Pro Thr Pro Glu Ile Thr
 1875 1880 1885
 Glu Lys Glu His Glu Gly Gln Gln Val Lys Pro Glu Ala Lys Gly Val
 1890 1895 1900
 Arg Asn Gly Ile Arg Gln Tyr Pro Glu Asp Thr Ser Pro Gln Ile Arg
 1905 1910 1915 1920
 Asn Pro Ser Glu Ser Ile Ile Ala Asn His Thr Ile Thr Gly His Pro
 1925 1930 1935
 Gly Leu Tyr Ala Lys Glu Glu Thr Arg Ser Lys Gly Leu Lys Ile
 1940 1945 1950

<210> 6904

<211> 450

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (399)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 6904

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 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
 275 280 285
 Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu

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<210> 6905
<211> 478
<212> PRT
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Tyr 1	Leu	Ile	Tyr	Met 5	Glu	Gln	Thr	Lys	Asn 10	Glu	Pro	Lys	Asn	Glu	Asn 15
Lys	Ala	Ala	Pro	Asp	Asn	Gly	Lys	Pro	Lys	Asn	Arg	Arg	Gln	Ala	Glu
			20					25					30		
Ser	His	Gln	Ala	Cys	Leu	Asn	Gly	Gln	Gly	Ala	Lys	Glu	Glu	Gly	Lys
		35					40					45			
Ala	Lys	Glu	Arg	Lys	Pro	Leu	Thr	Glu	Ala	Gln	Arg	Leu	Lys	Arg	Gln
	50					55					60				
Lys	Met	Ile	Val	Leu	Pro	Ala	Met	Val	Leu	Val	Phe	Ile	Gly	Ala	Met
65				70					75						80
Trp	Leu	Ile	Phe	Ala	Pro	Ser	Ser	Asp	Lys	Glu	Gln	Gln	Pro	Gly	Thr
			85						90					95	
Gly	Gly	Tyr	Asn	Ile	Glu	Met	Pro	Asp	Ala	Asp	Lys	Ala	Asn	Arg	Gln
			100					105					110		
Ile	Ile	Gly	Asp	Lys	Ala	Lys	Ala	Tyr	Glu	Gln	Gly	Ala	Met	Glu	Glu
		115					120					125			
Arg	Gln	Glu	Asn	Arg	Ser	Arg	Ala	Met	Gln	Glu	Leu	Gly	Asp	Met	Phe
	130					135					140				
Asp	Arg	Glu	Val	Ala	Glu	Thr	Asp	Gly	Gly	Arg	Asp	Phe	Asp	Leu	Ala
145				150						155				160	
Asn	Pro	Gly	Asn	Ala	Glu	Glu	Ala	Thr	Ser	Thr	Ser	Ser	Ala	Pro	Lys
			165						170					175	
Thr	Ile	Gln	Ser	Ser	Ala	Ala	Ala	Tyr	Arg	Asp	Leu	Asn	Ala	Thr	Leu
		180						185					190		
Gly	Asn	Phe	Tyr	Glu	Gln	Pro	Lys	Asn	Asp	Asn	Thr	Glu	Met	Asp	Glu
		195					200					205			
Leu	Leu	Glu	Arg	Ile	Ala	Ser	Leu	Glu	Ser	Glu	Leu	Glu	Ser	Glu	Lys
	210					215				220					
Gly	Lys	Ala	Ser	Ala	Met	Asp	Asp	Gln	Val	Ala	Leu	Met	Glu	Lys	Ser
225				230						235				240	
Tyr	Glu	Leu	Ala	Ala	Lys	Tyr	Met	Gly	Gly	Gln	Asn	Asn	Gly	Lys	Pro

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
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<400> 6906

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			20					25					30		
Ala	Gly	Leu	Gly	Ala	Leu	Phe	Tyr	Val	Ala	Tyr	Arg	Val	Trp	Gln	Ser
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Leu	Ala	Arg	Ala	Glu	Pro	Ile	Asp	Val	Phe	Pro	Met	Leu	Arg	Pro	Phe
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Ala	Ile	Gly	Leu	Cys	Ile	Met	Phe	Phe	Pro	Thr	Val	Val	Leu	Gly	Thr
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Ile	Asn	Ser	Ile	Met	Ser	Pro	Val	Val	Gln	Gly	Thr	Ala	Lys	Met	Leu
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Glu	Thr	Glu	Thr	Leu	Asp	Met	Asn	Arg	Tyr	Arg	Glu	Gln	Lys	Asp	Lys
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Leu	Glu	Tyr	Glu	Ala	Met	Met	Arg	Asn	Pro	Glu	Thr	Ala	Tyr	Leu	Val
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Ser	Asn	Glu	Glu	Phe	Asp	Lys	Gln	Leu	Glu	Glu	Leu	Gly	Trp	Ser	Pro
	130					135					140				
Gly	Asp	Met	Val	Thr	Met	Ala	Gly	Met	Tyr	Ile	Glu	Arg	Gly	Met	Tyr
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Asn	Met	Lys	Lys	Gly	Ile	Arg	Asp	Phe	Phe	Arg	Glu	Ile	Leu	Glu	Leu
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Met	Phe	Gln	Ala	Ala	Ala	Leu	Val	Ile	Asp	Thr	Ile	Arg	Thr	Phe	Phe

[illegible][illegible][illegible]

260						265						270					
Gln	Glu	Val	Asn	Leu	Leu	Val	Gln	Tyr	Thr	Arg	Thr	Ser	Ser	Val	Phe		
275						280						285					
Ser	Glu	Cys	Arg	Asn	Tyr	Met	Gly	Ala	Gly	Val	Thr	Trp	Ile	Tyr	Val		
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Pro	Gly	Gly	Gln	Lys	Arg	His	Glu	Ala	Gly	Leu	Phe	Leu	Ser	Ala	Ala		
305						310						315					
Gln	Phe	Lys	Ser	Cys	Asn	Glu	Val	Ala	Gly	Glu	Val	Thr	Tyr	Arg	Tyr		
320						325						330					
Ser	Phe	Asn	Arg	Asp	Thr	Tyr	Ile	Gln	Pro	Ala	Ile	His	Leu	Ile	Lys		
335						340						345					
Asn	Gly	Gly	Gly	Leu	His	Glu	Val	Phe	Leu	Ile	Arg	Met	Gly	Tyr	Ile		
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Leu	Asn	Gly	Gly	Arg	Val	Arg											
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<210> 6908

<211> 427

<212> PRT

<213> B.fragilis

<400> 6908

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Lys	Lys	Asp	Gly	Thr	Val	Pro	Val	Met	Gly	Arg	Ile	Thr	Val	Asp	Gly		
35						40						45					
Ser	Gln	Thr	Gln	Phe	Ser	Cys	Lys	Leu	Thr	Val	Asp	Pro	Lys	Leu	Trp		
50						55						60					
Asp	Thr	Lys	Gly	Gly	Arg	Val	Thr	Gly	Arg	Ser	Thr	Ala	Ala	Leu	Glu		
65						70						75					
Thr	Asn	Arg	Met	Leu	Asp	Lys	Met	Arg	Val	Arg	Ile	Asn	Lys	His	Tyr		
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Gln	Glu	Ile	Met	Glu	Arg	Asp	Asn	Phe	Val	Thr	Ala	Glu	Lys	Val	Lys		
100						105						110					
Asn	Ala	Phe	Leu	Gly	Leu	Glu	His	Arg	Tyr	His	Thr	Leu	Leu	Gln	Val		
115						120						125					
Phe	Arg	Gln	His	Asn	Glu	Asp	Tyr	Ala	Lys	Gln	Val	Glu	Ala	Gly	Met		
130						135						140					
Lys	Ala	Lys	Gly	Thr	Phe	Asp	Lys	Tyr	Lys	Ile	Val	Tyr	Lys	His	Leu		
145						150						155					
Gln	Glu	Phe	Leu	Thr	Ile	Arg	Tyr	His	Val	Lys	Asp	Ile	Ala	Leu	Lys		
165						170						175					
Glu	Leu	Thr	Pro	Ala	Phe	Ile	Ser	Asp	Phe	Glu	Met	Phe	Leu	Arg	Thr		
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Asp	Lys	His	Cys	Cys	Thr	Asn	Thr	Val	Trp	Leu	Tyr	Val	Cys	Pro	Leu		
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Arg	Thr	Met	Val	Phe	Ile	Ala	Ile	Asn	Asn	Glu	Trp	Leu	Thr	Arg	Asp		
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Pro	Phe	Arg	Glu	Tyr	Glu	Ile	Lys	Lys	Glu	Glu	Thr	Thr	Arg	Ser	Phe		
225						230						235					
Leu	Thr	Lys	Asp	Glu	Ile	Arg	Leu	Leu	Met	Glu	Gly	Lys	Leu	Lys	Asn		
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Ala	Lys	Gln	Glu	Leu	Tyr	Arg	Asp	Leu	Tyr	Leu	Phe	Cys	Ala	Phe	Thr		
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Gly	Leu	Ser	Phe	Ala	Asp	Met	Arg	Asn	Leu	Thr	Glu	Glu	Asn	Ile	Arg		
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 305 310 315 320
 Asp Lys Tyr Arg Gly Leu Cys Glu Asn Gly Arg Ile Phe Pro Val Pro
 325 330 335
 His Tyr Asn Thr Cys Leu Ala Gly Ile Arg Ala Val Ala Lys Arg Cys
 340 345 350
 Gly Ile Thr Lys His Ile Thr Trp His Gln Ser Arg His Thr Ala Ala
 355 360 365
 Thr Thr Val Phe Leu Ser Asn Gly Val Pro Ile Glu Thr Val Ser Ser
 370 375 380
 Met Leu Gly His Lys Ser Ile Lys Thr Thr Gln Ile Tyr Ala Lys Ile
 385 390 395 400
 Thr Lys Glu Lys Leu Asn Gln Asp Met Glu His Leu Ala Ala Arg Leu
 405 410 415
 Asn Gln Ile Glu Glu Phe Ala Gly Cys Thr Ile
 420 425

<210> 6909
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 6909
 Thr Ser Gly Tyr Arg Ser Glu Ile Gly Ile Val Thr Arg Pro Glu Asn
 1 5 10 15
 Asp Ser Phe Gly Arg Ser Ala Asp Asn Ser Gly Thr His Val Ala Asp
 20 25 30
 Ile Val Lys Leu Asp Asp Ala Ser Val Thr Val Ser Pro Thr Val Tyr
 35 40 45
 Phe Arg Lys Phe Leu Tyr Trp Ile Gly Leu Thr Gly Lys
 50 55 60

<210> 6910
 <211> 84
 <212> PRT
 <213> B.fragilis

<400> 6910
 Gly Cys Ser Leu Lys Tyr Glu Asn Thr Ala Asn Thr Lys Met Ala Lys
 1 5 10 15
 Gln Pro Ile Ala Phe Lys Asn Phe Phe Ile Tyr Ser Val Val Leu Val
 20 25 30
 Thr His Asn Lys Tyr Arg Arg Phe Phe Leu Ser Ile Lys Lys Thr Phe
 35 40 45
 Leu Thr Lys Thr Tyr Lys Leu Lys Ile Asn Lys Met Pro Pro Tyr Lys
 50 55 60
 Asn Leu His Gln Lys Ser Ser Leu Cys Glu Lys Ser Ser Leu Ser Leu
 65 70 75 80
 Gly Ser Thr Asn

<210> 6911
 <211> 114
 <212> PRT
 <213> B.fragilis

<400> 6911
 Asn Pro Pro Leu His His Phe Ile Asp Gly Ile Leu Gly Cys Leu Pro

1 5 10 15
 Cys Leu Val Ser Gly Leu Asp Glu Glu Glu Ala Tyr His Leu Val Leu
 20 25 30
 Leu Ala Gly Arg Asp Asn Gly Glu Val Phe Val Leu Ala Glu Asn Ala
 35 40 45
 Leu Ser Gly Ala Gln Arg Phe Gln Leu His Thr Ala Met Gly Ala Gly
 50 55 60
 Thr Ser Ala Asn Gly Val Arg Lys Val Val Val Ala Leu Pro Arg Met
 65 70 75 80
 Ser Ala Leu Gly Thr Asp Ile Arg Ala Val Arg Pro Leu Asp Cys Val
 85 90 95
 Met Leu Glu Ala Met Thr Glu Ser Val Cys Leu Leu Arg Gly Gly Gln
 100 105 110
 Ser Arg

<210> 6912
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 6912
 Leu Arg Asp Leu Thr Gly Lys Gln Gly Gln Ala Ser Cys Phe Arg Glu
 1 5 10 15
 Lys Ser Pro Ala Leu Arg Val Val Phe Phe Pro Lys Asn Leu Ala Phe
 20 25 30
 Pro Asn Pro Tyr Leu Phe Lys His Pro Lys Arg Lys Arg Pro Met Arg
 35 40 45
 Gln Lys Asp Ala Leu Lys Lys Met Ser Asp Lys Arg Glu Ala Asp Lys
 50 55 60
 Ile Val
 65

<210> 6913
 <211> 532
 <212> PRT
 <213> B.fragilis

<400> 6913
 Asn Ile Phe Gln Met Ala Lys Lys Lys Ser Glu Lys Asp Val Leu Ile
 1 5 10 15
 Val Arg Asp Glu Lys Thr Gly Glu Ile Ser Val Val Ala Gly Leu Asp
 20 25 30
 Ala Asp Gly Ser Pro Lys Arg Thr Pro Ala Lys Ala Glu Asn Ala Gln
 35 40 45
 Ser Phe Leu Gln Phe Asp Arg His Gly Asp Val Leu Asp Asn Phe Phe
 50 55 60
 Lys Asn Phe Phe Arg Gln Cys Lys Glu Pro Ser Arg Phe Gly Phe Tyr
 65 70 75 80
 Arg Val Ala Ala Asp Gln Ala Asp Lys Leu Met Glu Val Met Lys Asp
 85 90 95
 Leu Leu Lys Asp Pro Glu Ala Asn Lys Glu Leu Leu Ala Pro His Lys
 100 105 110
 Val Asp Thr Ser Gly Tyr Glu Lys Gln Val Lys Glu Glu Gln Thr Ala
 115 120 125
 Gly Lys Thr Glu Gln Thr Glu Gln Lys Gln Glu Glu Gln Pro Lys Glu
 130 135 140
 Asn Gln Lys Gln Glu Glu Met Glu Lys Lys Gln Glu Ser Pro Gln Gln
 145 150 155 160

Thr Gln Gly Arg Gln Gly Tyr Gln Pro Ile Asp Glu Ser Lys Ile Asn
 165 170 175
 Trp Gln Glu Leu Glu Glu Lys Trp Gly Val Lys His Asp Asp Leu Glu
 180 185 190
 Lys Ser Gly Asp Leu Gln Lys Met Leu Asn Tyr Gly Lys Ser Asp Leu
 195 200 205
 Val Lys Val Ser Pro Lys Phe Gly Gly Glu Ala Phe Glu Leu Asp Ala
 210 215 220
 Arg Leu Ser Phe Lys Lys Asp Gly Glu Gly Asn Val Ser Leu Val Pro
 225 230 235 240
 His Phe Ile Arg Lys Glu Gln Lys Leu Asp Glu Tyr Lys Glu His Lys
 245 250 255
 Phe Ser Asp Glu Asp Arg Lys Asn Leu Arg Glu Thr Gly Asn Leu Gly
 260 265 270
 Arg Val Val Asp Ile Val Asp Arg Glu Thr Gly Glu Ile Ile Pro Ser
 275 280 285
 Phe Ile Ser Ile Asp Arg Lys Thr Asn Glu Ile Thr Asp Ile Pro Ala
 290 295 300
 Asn Lys Val Arg Ile Pro Asp Arg Ile Gly Lys Thr Glu Ile Thr Lys
 305 310 315 320
 Gln Glu Gln Asp Met Leu Arg Ala Gly Leu Pro Val Arg Asp Lys Leu
 325 330 335
 Ile Glu Arg Asn Asp Gly Arg Lys Phe Val Thr Thr Leu Gln Val Asn
 340 345 350
 Val Glu Gln Arg Gly Val Glu Phe Val Pro Gly Thr Gly Arg Ser Pro
 355 360 365
 Arg Thr Ala Gln Thr Gln Glu Ala Lys Asn Asn Pro Thr Gln Gly Gln
 370 375 380
 Ala Gln Gly Met Glu Asn Ser Ala Ala Pro Gln Lys Glu Gln Arg Arg
 385 390 395 400
 Asn Thr Trp Thr Asn Ala Asp Gly Ser Ile Arg Pro Ile Ser Lys Trp
 405 410 415
 Ser Gly Val Asn Phe Thr Asp Gln Gln Lys Ala Asp Tyr Ala Ala Gly
 420 425 430
 Lys Ala Ile Lys Leu Glu Asn Val Thr Asp Lys Gln Gly Phe His Ala
 435 440 445
 Thr Met Tyr Ile Lys Phe Asn Pro Glu Lys Gly Arg Pro Tyr Arg Tyr
 450 455 460
 Asp Thr Asn Pro Asp Asn Ala Gln Lys Val Ala Pro Ser Asn Glu Ser
 465 470 475 480
 Arg Thr Gln Val Ala Val Asn Ser Glu Gly Lys Thr Asn Glu Ala Thr
 485 490 495
 Lys Asn Leu Lys Glu Pro Leu Gln Lys Gly Gln Thr Ala Pro Lys Asp
 500 505 510
 Asp Lys Gln Gln Lys Leu Gln Glu Lys Pro Gln Lys Lys Ile Ile Lys
 515 520 525
 Gly Met Lys Met
 530

<210> 6914

<211> 785

<212> PRT

<213> B.fragilis

<400> 6914

Thr Phe Ile His Val Pro Lys Ile Asn Val Ile Lys Ile Met Glu Arg
 1 5 10 15
 Ser Gly Asn Phe Tyr Lys Ala Ile Gln Leu Gly Tyr Ile Leu Ile Ser
 20 25 30

Ile	Leu	Ile	Gly	Cys	Met	Ala	Tyr	Asn	Ser	Leu	Tyr	Glu	Trp	Gln	Glu
		35					40					45			
Ile	Glu	Ala	Leu	Glu	Leu	Gly	Asn	Lys	Lys	Ile	Asp	Glu	Leu	Arg	Lys
		50				55					60				
Glu	Ile	Asn	Asn	Ile	Asn	Ile	Gln	Met	Ile	Lys	Phe	Ser	Leu	Leu	Gly
65					70					75					80
Glu	Thr	Ile	Leu	Glu	Trp	Asn	Asp	Lys	Asp	Ile	Glu	His	Tyr	His	Ala
				85					90					95	
Arg	Arg	Met	Ala	Met	Asp	Ser	Met	Leu	Cys	Arg	Phe	Lys	Ala	Thr	Tyr
			100					105					110		
Pro	Ala	Glu	Arg	Ile	Asp	Ser	Val	Arg	Ser	Leu	Leu	Glu	Asp	Lys	Glu
		115					120					125			
Arg	Gln	Met	Phe	Gln	Ile	Val	Arg	Leu	Met	Asp	Glu	Gln	Gln	Ser	Ile
	130					135					140				
Asn	Lys	Lys	Ile	Ala	Asn	Gln	Ile	Pro	Val	Ile	Val	Gln	Lys	Ser	Val
145					150					155					160
Gln	Glu	Gln	Ser	Lys	Lys	Pro	Lys	Arg	Lys	Gly	Phe	Leu	Gly	Ile	Phe
				165					170					175	
Gly	Lys	Lys	Glu	Gly	Thr	Lys	Pro	Thr	Thr	Thr	Thr	Thr	Thr	Leu	Arg
			180					185						190	
Ser	Ser	Asn	Arg	Asn	Met	Val	Asn	Glu	Gln	Lys	Ala	Gln	Ser	Arg	Arg
		195					200					205			
Leu	Ser	Glu	Gln	Ala	Asp	Ser	Leu	Ala	Ala	Arg	Asn	Ala	Glu	Leu	Asn
	210					215					220				
Arg	Gln	Leu	Gln	Gly	Leu	Ile	Cys	Gln	Ile	Glu	Lys	Lys	Val	Gln	Ser
225					230					235					240
Asp	Leu	Gln	Asn	Arg	Glu	Ser	Glu	Ile	Thr	Ala	Met	Arg	Lys	Lys	Ser
				245					250					255	
Phe	Met	Gln	Ile	Gly	Gly	Leu	Met	Gly	Phe	Val	Leu	Leu	Leu	Leu	Val
			260					265					270		
Ile	Ser	Tyr	Ile	Ile	Ile	His	Arg	Asp	Ala	Lys	Asn	Ile	Lys	Arg	Tyr
		275					280					285			
Lys	Arg	Lys	Thr	Thr	Asp	Leu	Ile	Glu	Gln	Leu	Glu	Gln	Ser	Val	Gln
	290					295					300				
Gln	Asn	Glu	Val	Leu	Ile	Thr	Ser	Arg	Lys	Lys	Ala	Val	His	Thr	Ile
305					310					315					320
Thr	His	Glu	Leu	Arg	Thr	Pro	Leu	Thr	Ala	Ile	Thr	Gly	Tyr	Thr	Glu
				325					330					335	
Leu	Leu	Arg	Lys	Glu	Cys	Asn	Ser	Gly	Asn	Asn	Gly	Gln	Tyr	Ile	Arg
			340					345					350		
Asn	Ile	Leu	Gln	Ser	Ser	Asp	Arg	Met	Arg	Asp	Met	Leu	Asn	Thr	Leu
	355						360					365			
Leu	Asp	Phe	Phe	Arg	Leu	Asp	Asn	Gly	Lys	Glu	Gln	Pro	Arg	Leu	Ser
	370					375					380				
Pro	Cys	Arg	Ile	Ser	Ala										

[illegible]

<400> 6915

Lys	Gln	Ile	His	Gln	Leu	Lys	Lys	Lys	Met	Arg	Met	Ser	Ile	Ser	Arg
1				5					10					15	
Thr	Lys	Met	Leu	Gln	Val	Ser	Lys	Cys	Leu	Ile	Gly	Leu	Ala	Val	Met
			20					25					30		
Met	Leu	Gln	Ser	Cys	Asp	Val	Ala	Asp	Asn	Arg	Arg	Asp	Leu	Leu	Cys
		35					40					45			
Gly	Asn	Trp	Glu	Ser	Val	Glu	Gly	Lys	Pro	Asp	Val	Leu	Ile	Tyr	Lys
	50					55					60				
Glu	Gly	Glu	Ala	Tyr	Lys	Val	Thr	Val	Phe	Lys	Arg	Ser	Gly	Leu	Arg
65				70					75					80	
Arg	Lys	Leu	Lys	Pro	Glu	Thr	Tyr	Leu	Leu	Gln	Glu	Glu	Asn	Gly	Asn
				85					90					95	
Leu	Phe	Met	Asn	Thr	Gly	Phe	Arg	Ile	Asp	Val	Ser	Tyr	Asn	Glu	Ala
			100					105					110		
Thr	Asp	Ile	Leu	Thr	Phe	Ser	Pro	Asn	Gly	Asp	Tyr	Val	Arg	Val	Asn

115 120 125
 Pro Lys Pro Asp His Pro Ile Gly Glu Gln
 130 135

<210> 6916
 <211> 133
 <212> PRT
 <213> B.fragilis

<400> 6916
 Phe Glu Thr Gln Leu Pro Gln Leu Leu Asn Pro His Lys Lys Ile Lys
 1 5 10 15
 Ile Lys Asn Arg Thr Asp Met Gly Thr Thr Met Ala Thr Lys Phe Val
 20 25 30
 Ala Trp Glu Val Pro Thr Leu Glu Ala Leu Lys Gly Ser Lys Val Tyr
 35 40 45
 Ile Leu Arg Glu Lys Leu Asn Asn Gly Gly Gln Met Asn Arg Glu Glu
 50 55 60
 Lys Asp Trp Leu Thr Arg Asn Val Asn Ser Asn Thr Tyr Phe Lys Ser
 65 70 75 80
 Ala Val Pro Leu Gln Gly Trp Arg Phe Asp Phe Ser Asp Val Leu Arg
 85 90 95
 Thr Phe Ile Val Cys Gln Tyr Gly His Trp Thr Glu Tyr Lys Ala Thr
 100 105 110
 Asp Lys Thr Gly Leu Arg Arg Tyr Leu Tyr Gly Arg Ile Asp Asn Ile
 115 120 125
 Val Glu Leu Glu Lys
 130

<210> 6917
 <211> 174
 <212> PRT
 <213> B.fragilis

<400> 6917
 Leu Lys Asn Gln Met Thr Met Asn Ile Leu Asn Asn Lys Asn Lys Arg
 1 5 10 15
 Ile Ser Ile Phe Lys Ala Leu Ala Leu Cys Leu Phe Ala Ala Val Ser
 20 25 30
 Leu Thr Leu Val Ser Cys Asp Asp Asp Met Asp Ile Gln Gln Ser Tyr
 35 40 45
 Pro Phe Thr Val Glu Ile Met Pro Val Pro Asn Lys Val Thr Lys Gly
 50 55 60
 Gln Thr Val Glu Ile Arg Cys Glu Leu Lys Lys Thr Gly Asp Tyr Ala
 65 70 75 80
 Asn Thr Leu Tyr Thr Ile Arg Tyr Phe Gln Phe Glu Gly Glu Gly Thr
 85 90 95
 Leu Lys Met Asp Asn Gly Ile Thr Phe Leu Pro Asn Asp Arg Tyr Leu
 100 105 110
 Leu Glu Asn Glu Lys Phe Arg Leu Tyr Tyr Thr Ala Ala Gly Glu Glu
 115 120 125
 Ala His Asn Phe Ile Val Val Glu Asp Asn Phe Asp Asn Ser Tyr
 130 135 140
 Glu Leu Glu Phe Asp Phe Asn Asn Arg Asn Val Lys Asp Asp Gly Ala
 145 150 155 160
 Ile Ser Val Val Pro Ile Gly Asn Phe Lys Pro Leu Thr Arg
 165 170

<210> 6918

<211> 150
 <212> PRT
 <213> B.fragilis

<400> 6918

Gly	Leu	Lys	His	Leu	Ser	Ile	Tyr	Gly	Ser	Gly	Asn	Thr	Thr	Phe	Thr
1				5					10					15	
Asn	Gly	Ile	Lys	Ser	His	Asp	Glu	Leu	Gln	Met	Ser	Ile	Tyr	Gly	Ser
			20					25					30		
Gly	Asn	Ile	Ser	Gly	Asn	Ser	Phe	Ser	Cys	Thr	Lys	Leu	Ala	Ala	Arg
			35				40					45			
Ile	Tyr	Gly	Ser	Gly	Asn	Val	Asn	Leu	Lys	Arg	Ile	Ser	Thr	Ser	Asp
	50					55					60				
Thr	Gln	Val	Asn	Ile	Ser	Gly	Ser	Gly	Asn	Val	Leu	Leu	Asp	Gly	Lys
65					70				75						80
Ser	Thr	Glu	Ala	Glu	Tyr	His	Ile	Ala	Gly	Ser	Gly	Asp	Ile	Asn	Ala
				85					90					95	
Thr	Glu	Leu	Lys	Val	Glu	Asn	Val	Asn	Ala	Arg	Ile	Ser	Gly	Ser	Gly
			100					105					110		
Ser	Ile	Arg	Cys	Tyr	Ala	Thr	Glu	Asn	Leu	Thr	Gly	Gly	Val	Ser	Gly
		115					120					125			
Ser	Gly	Asn	Val	Ala	Tyr	Lys	Gly	Asn	Pro	Gln	Ile	Asn	Phe	Ser	Lys
	130					135					140				
Arg	Gly	Leu	Gln	Lys	Leu										
145					150										

<210> 6919
 <211> 433
 <212> PRT
 <213> B.fragilis

<400> 6919

Phe	Leu	Met	Gln	Gln	Asn	Asn	Ser	Glu	Lys	Trp	Asn	Phe	Leu	Ser	Asn
1				5					10					15	
Lys	Lys	Leu	Phe	Trp	Gly	Thr	Ile	Ile	Val	Ile	Leu	Phe	Leu	Phe	Leu
			20					25					30		
Leu	Ser	Ala	Trp	Leu	Phe	Phe	Trp	Asn	Arg	Glu	Arg	His	Phe	Phe	Asn
		35					40					45			
Asp	Asn	Tyr	Val	Leu	Asp	Asn	Ala	Leu	Trp	Gly	Thr	Leu	Gly	Asp	Phe
	50					55					60				
Val	Gly	Gly	Phe	Ile	Gly	Ser	Ile	Leu	Ala	Phe	Ile	Gly	Val	Ile	Val
65					70				75						80
Thr	Cys	Gln	Ile	Phe	Ile	Glu	Gln	Arg	Gln	Gln	Thr	Ile	Asp	Leu	Asn
				85				90						95	
Glu	Glu	Gln	Lys	Arg	Ile	Thr	Ser	Asn	Ser	Gln	Lys	Ser	Gln	Ile	Asn
			100					105					110		
Gln	Ser	Glu	Ile	Gln	Arg	Phe	Asn	Ser	Leu	Phe	Phe	Glu	Leu	Ile	Asp
		115					120					125			
Leu	His	Arg	Thr	Gln	Val	Asp	Tyr	Leu	Met	Lys	Met	Pro	Leu	Val	Gly
	130					135					140				
Phe	Glu	Ala	Glu	Asn	Ser	Lys	Glu	Thr	Asn	Phe	Phe	Asp	Arg	Phe	Met
145					150					155					160
Glu	Glu	Leu	His	Ser	Asn	Ser	Asn	Val	Asn	Ser	Ser	Tyr	Ala	Arg	Ala
				165				170						175	
Phe	Ile	Val	Ala	Lys	Arg	Lys	Tyr	Leu	Gln	Leu	Tyr	Leu	Ser	Asn	Ser
		180						185					190		
Thr	Ile	Leu	Ala	Pro	Tyr	Phe	Arg	Val	Leu	Tyr	Arg	Leu	Phe	Glu	Leu
	195						200					205			
Ile	Asp	Lys	Ala	Asn	Ile	Glu	Glu	Lys	Glu	Lys	Val	Arg	Tyr	Ala	Lys

210		215		220
Ile Ala Arg Ala Gln	Leu Ser Glu Ser Glu	Leu Phe Ile Leu Arg Tyr		
225		230		240
Asn Ser Ala Asn Leu	Tyr Gly Asp Asn Phe	Ile Glu Tyr Ile Asn Lys		
	245		250	255
Phe Arg Leu Leu Lys	His Leu Pro Leu Leu	Ser Leu Leu Glu Phe Lys		
	260		265	270
Asn Ile Arg Asn Val	Ile Ala Glu Gly Asp	Ser Leu Tyr Gln Tyr Ser		
	275		280	285
Ile Asn Met Leu Phe	Phe Ser Val Trp Lys	Arg Ile Tyr Asn Ile Thr		
	290		295	300
Val Gly His Glu Asp	Arg Thr Asn Asp Phe	Val Gln Leu Tyr Asp Glu		
305		310		320
Arg Lys Arg Tyr Lys	Phe Glu Leu Lys Met	Pro Lys Lys His Arg Thr		
	325		330	335
Ala Leu Tyr Leu Thr	Ile Asp Thr Ser Arg	Pro Asn Arg Asp Pro Leu		
	340		345	350
Leu Lys Cys Phe Arg	Asn Phe Asn Glu Ser	Asp Phe Gly Lys Leu Leu		
	355		360	365
Thr Asn Phe Leu Leu	Glu Ile Tyr Lys Tyr	Ser Asn Phe Ser Arg Tyr		
	370		375	380
Asn Lys Asp Glu Asn	Ile Glu Tyr His Lys	Lys Val Phe His Asp Gly		
385		390		400
Ser Val Thr Lys Ile	Val Cys Trp Ile Leu	Asn Thr Glu Asn Lys Leu		
	405		410	415
Leu Arg Val Ser His	Pro Ser Arg Asp Lys	Phe Tyr Gly Ile Ser Glu		
	420		425	430
Asp				

<210> 6920
 <211> 386
 <212> PRT
 <213> B.fragilis

<400> 6920
Pro Asn Met Gln Glu Thr Asn Ser Lys Ile Asn Lys Tyr Asp Tyr Leu
1 5 10 15
Ile Val Gly Ala Gly Leu Phe Gly Ser Val Phe Ala His Glu Ala His
20 25 30
Lys Arg Asn Lys Arg Cys Leu Val Leu Glu Lys Arg Pro Trp Thr Gly
35 40 45
Gly Asn Ile Tyr Cys Glu Asn Ile Asn Glu Ile His Val His Lys Tyr
50 55 60
Gly Ala His Ile Phe His Thr Asp Lys Lys Lys Ile Trp Asp Tyr Val
65 70 75 80
Asn Ser Leu Val Glu Phe Asn Gln Phe Ile Asn Ser Pro Leu Ala Ser
85 90 95
Ser Gly Gly Lys Leu Tyr Asn Leu Pro Phe Asn Met Asn Thr Phe Tyr
100 105 110
Gln Leu Trp Gly Val Gln Thr Pro Met Glu Ala Glu Ile Lys Leu Glu
115 120 125
Glu Gln Arg His Pro Tyr Arg Ile Ile Thr Asn Pro Gln Asn Leu Glu
130 135 140
Glu Gln Ala Leu Lys Ile Cys Gly Ser Asp Ile Tyr Tyr Arg Leu Ile
145 150 155 160
Lys Gly Tyr Thr Glu Lys Gln Trp Gly Arg Ala Ala Thr Lys Leu Pro
165 170 175
Ala Phe Ile Val Lys Arg Ile Pro Phe Arg Phe Thr Phe Asp Asn Asn

180 185 190
 Tyr Phe Asn Asp Pro Tyr Gln Gly Ile Pro Ile Gly Gly Tyr Asn Arg
 195 200 205
 Leu Ile Asn Ala Leu Leu Glu Gly Ile Glu Val Lys Thr Asn Ile Asn
 210 215 220
 Tyr Leu Glu Asn Arg Asn Lys Trp Asp Ser Ile Ala Glu Lys Val Leu
 225 230 235 240
 Phe Thr Gly Cys Ile Asp Glu Tyr Phe Asn Phe Cys Tyr Gly Lys Leu
 245 250 255
 Glu Tyr Arg Ser Leu Arg Phe Glu Thr His Cys Leu Asn Asp Ile Ser
 260 265 270
 Asn Tyr Gln Gly Asn Ala Val Ile Asn Tyr Cys Asp Ser Asn Ile Pro
 275 280 285
 Tyr Thr Arg Val Ile Glu His Lys His Phe Glu Phe Gly Thr Gln Asn
 290 295 300
 Ser Thr Ile Ile Thr Tyr Glu Phe Pro Glu Glu Leu Ser Ile Gly Lys
 305 310 315 320
 Glu Pro Tyr Tyr Pro Ile Asn Asp Glu Lys Asn Thr Thr Ile Phe Arg
 325 330 335
 Lys Tyr Gln Thr Leu Ala Glu Thr Asn Lys Lys Val Leu Leu Gly Gly
 340 345 350
 Arg Leu Ala Gln Tyr Thr Tyr Ala Asp Met Asp Asp Thr Val Glu Ala
 355 360 365
 Ala Leu Ser Leu Trp Asn Lys Glu Leu Gln Asn Ser Ser Gln Thr Lys
 370 375 380
 Leu Ile
 385

<210> 6921
 <211> 246
 <212> PRT
 <213> B.fragilis

<400> 6921
 Lys Arg Thr His Met Asn Gly Thr Ile Ser Met Thr Asp Ile Leu Leu
 1 5 10 15
 Ala Val Ser Val Gly Cys Asn Leu Trp Phe Leu Phe Leu Leu Tyr
 20 25 30
 Asp Arg Ile Met Glu Thr Arg Phe Val Arg Phe Leu Lys Gly Ile Ala
 35 40 45
 Gly Leu Trp Arg Ser Leu Asp Gly Met Ala Ala Lys Gln Glu Thr Val
 50 55 60
 Arg Glu Ala Ser Pro Ala Glu Thr Ser Asp Ile Ile Gly Lys Ser Arg
 65 70 75 80
 Phe Arg Met Ala Ser Thr Arg Thr Thr Ala Ala Ile Pro Thr Gln Glu
 85 90 95
 Ala Ala Thr Ser Glu Lys Gly Ile Glu Leu Ser Glu Glu Glu Ala Thr
 100 105 110
 Phe Asp Asp Gly Asn Thr Glu Thr Val Ser His Pro Ala Gln Val Pro
 115 120 125
 Glu Glu Lys Leu Asp Glu Thr Phe Thr Ser Ile Pro Pro Ser Glu Leu
 130 135 140
 Glu Phe Gly Glu Asp Glu Pro Glu Asp Gly Thr Pro Asp Thr Pro Arg
 145 150 155 160
 Ala Thr Gly Ser Ser Phe Asp Glu Ile Asp Asp Ala Val Arg Ala Ala
 165 170 175
 Lys Asn Pro Glu Ala Thr Thr Ala Glu Arg Glu Arg Ala Ala Lys Val
 180 185 190
 Phe Ser Asp Met Glu Gly Thr Glu Leu Tyr Glu Lys Leu Met Ser Gly

195	200	205
Ser Thr Glu Leu Ser Ile Arg	Ile Lys Gly Leu Ile Glu Val Arg Leu	
210	215	220
Lys Lys Pro Lys Lys Glu Phe Thr Val Pro Asp Asn Ile Asp Glu Phe		
225	230	235
Asn Ile Arg Asp Tyr Val		
245		

<210> 6922
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 6922
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 6923
 <211> 452
 <212> PRT
 <213> B.fragilis

<400> 6923
 Ser Gly Trp Gln Lys Arg Lys Gly Glu Asn Thr Lys Met Asp Lys Thr
 1 5 10 15
 Thr Ile Ile Val Val Glu Asp Asn Ile Val Tyr Cys Glu Phe Val Cys
 20 25 30
 Asn Met Leu Ala Arg Glu Gly Tyr Arg Thr Val Lys Ala Tyr His Leu
 35 40 45
 Ser Thr Ala Lys Lys His Leu Gln Gln Ala Thr Asp Asn Asp Ile Val
 50 55 60
 Val Ala Asp Leu Arg Leu Pro Asp Gly Asn Gly Ile Asp Leu Leu Arg
 65 70 75 80
 Trp Met Arg Lys Glu Gly Lys Met Gln Pro Phe Ile Ile Met Thr Asp
 85 90 95
 Tyr Ala Glu Val Asn Thr Ala Val Glu Ser Met Lys Leu Gly Ser Ile
 100 105 110
 Asp Tyr Ile Pro Lys Gln Leu Val Glu Asp Lys Leu Val Pro Leu Ile
 115 120 125
 Arg Ser Ile Leu Lys Glu Arg Gln Ala Gly Gln Arg Arg Met Pro Val
 130 135 140
 Phe Ala Arg Asp Gly Ser Ala Phe Gln Lys Ile Met His Arg Ile Arg
 145 150 155 160
 Leu Val Ala Ala Thr Asp Met Ser Val Met Ile Phe Gly Glu Asn Gly
 165 170 175
 Thr Gly Lys Glu His Ile Ala His His Leu His Asp Lys Ser Lys Arg
 180 185 190
 Ala Val Lys Pro Phe Val Ala Val Asp Cys Gly Ser Leu Thr Lys Glu
 195 200 205

Leu Ala Pro Ser Ala Phe Phe Gly His Val Lys Gly Ala Phe Thr Gly
 210 215 220
 Ala Asp Cys Ala Lys Lys Gly Tyr Phe His Glu Ala Glu Gly Gly Thr
 225 230 235 240
 Leu Phe Leu Asp Glu Val Gly Asn Leu Ala Leu Glu Thr Gln Gln Met
 245 250 255
 Leu Leu Arg Ala Ile Gln Glu Arg Arg Tyr Arg Pro Val Gly Asp Lys
 260 265 270
 Ala Asp Arg Ser Phe Asn Val Arg Ile Ile Ala Ala Thr Asn Glu Asp
 275 280 285
 Leu Glu Ala Ala Val Ser Glu Lys Arg Phe Arg Gln Asp Leu Leu Tyr
 290 295 300
 Arg Leu His Asp Phe Gly Ile Thr Val Pro Pro Leu Arg Asp Cys Gln
 305 310 315 320
 Glu Asp Ile Met Pro Leu Ala Glu Phe Phe Arg Glu Ala Ala Asn Lys
 325 330 335
 Glu Leu Glu Cys Asp Val Ile Gly Phe Asp Gly Glu Ala Arg Lys Thr
 340 345 350
 Leu Leu Thr His Val Trp Pro Gly Asn Val Arg Glu Leu Arg Gln Lys
 355 360 365
 Ile Met Gly Ala Val Leu Gln Ala Gln Thr Gly Leu Val Thr Lys Glu
 370 375 380
 His Leu Glu Leu Ala Val Thr Lys Pro Thr Ser Pro Val Ser Phe Ala
 385 390 395 400
 Leu Arg Asn Asp Ala Glu Asp Lys Glu Arg Ile Leu Arg Ala Leu Lys
 405 410 415
 Gln Ala Asn Gly Asn Arg Lys Val Ala Ala Glu Leu Leu Gly Ile Gly
 420 425 430
 Arg Thr Thr Leu Tyr Ser Lys Leu Glu Glu Tyr Gly Leu Lys Tyr Lys
 435 440 445
 Phe Arg Gln Ser
 450

<210> 6924
 <211> 433
 <212> PRT
 <213> B.fragilis

<400> 6924
 Phe Leu Phe Asn Ile Cys Tyr Met Arg Ser Leu Phe Leu Ile Phe Phe
 1 5 10 15
 Phe Cys Tyr Val Thr Gly Lys Ala Gln Asp Arg Ala Cys Val Val Ser
 20 25 30
 Glu Lys Asp Ser Ile Pro Leu Ser Asn Val Tyr Ile Cys Leu Lys Asp
 35 40 45
 Arg Arg Val Ile Ala Ile Ser Asp Glu Lys Gly Val Phe Ser Leu Glu
 50 55 60
 Lys Tyr Asp Ser Leu Ser Leu Asn Asp Thr Leu Tyr Phe Ser His Ile
 65 70 75 80
 Asn Tyr Leu His Lys Lys Leu Ser Tyr Gly Asp Leu Ile Lys Asn Arg
 85 90 95
 Cys Thr Val Phe Leu Ile Glu Asn Asn Arg Val Leu Glu Glu Val Ser
 100 105 110
 Ile Phe Ser Asn Arg His Leu Asn Arg Phe Leu His Tyr Glu Ile Leu
 115 120 125
 Ser Pro Leu Lys Arg Gly Val Tyr Ser Phe Ala Ser Val Leu Val Asp
 130 135 140
 Gly Gln Ile Tyr Ile Val Gly Gly Ser Thr Ser Cys Gly Pro Phe Gln
 145 150 155 160

Ser Asn Ile Arg Ser Thr Leu Phe Trp Glu Lys Tyr Ser Asn Met Met
 165 170 175
 Tyr Arg Tyr Asp Ile Lys Gln Asp Lys Trp Glu Thr Ile Arg His Lys
 180 185 190
 Phe Arg Glu Arg Ala Tyr His Thr Ala Gly Tyr Tyr Asp Gly Lys Ile
 195 200 205
 Phe Ile Leu Gly Gly Lys Arg Leu Ser Glu Thr Arg Ile Val Asp Tyr
 210 215 220
 Leu Asp Asn Ala Ile Glu Ile Tyr Asp Ile Lys Arg Asp Thr Val Trp
 225 230 235 240
 Thr Asp Tyr Thr Asn Pro His Gln Ala Thr Leu Leu Gly Ser Val Val
 245 250 255
 Tyr Lys Asp Asn Met Ile Val Leu Gly Gly Val Lys Lys Val Leu Gln
 260 265 270
 Asn Asn Glu Gly Val Tyr Ser Asp Glu Met His Leu Trp Asn Leu Lys
 275 280 285
 Ser Gly Tyr Trp Tyr Glu Leu Gly Lys Met Pro Ile Arg Gln Ala Pro
 290 295 300
 Glu Thr Ile Leu Val Asp His Cys Ile Tyr Leu Ile Gly Asn Arg Asn
 305 310 315 320
 Gly Gly Gly Trp Ser Ile Glu Cys Tyr Asn Leu Leu Thr Gly Ala Trp
 325 330 335
 Thr Asn Ala Gly His Leu Leu Tyr Arg Leu Gly Trp Pro Ser Leu Ala
 340 345 350
 Tyr His Asn Asp Ile Ile Tyr Ile Phe Glu Gln Gly Val Val Gln Thr
 355 360 365
 Phe Asn Ile Lys Ser Arg Gln Val Arg Ser Tyr Met Ile Asp Leu Lys
 370 375 380
 Leu Lys Ser Pro Ala Leu Tyr Tyr Phe Asp Gly Lys Leu Tyr Ile Leu
 385 390 395 400
 Gly Gly Phe Tyr Met Gly Asp Pro Ser Arg Asn Val Tyr Ser Val Asp
 405 410 415
 Leu Lys Glu Phe Asp Lys Thr Glu Val Asp Tyr Tyr Tyr Asn Asn Val
 420 425 430
 Arg

<210> 6925

<211> 85

<212> PRT

<213> B.fragilis

<400> 6925

His Arg Val Lys Thr Cys Ser Leu Asp Val Asn Lys Lys Phe Phe Lys
 1 5 10 15
 Cys Lys Arg Leu Val Ile Cys Ala Gln Glu Pro Ala Asn Leu Gln Lys
 20 25 30
 Thr Leu Thr Met Leu Ile Glu Glu Arg Tyr Lys Asp Glu Asp Thr Gly
 35 40 45
 Ser Asp Asp Val Asn Ser Leu Pro Lys Leu Glu Leu Ser Tyr Ser Ala
 50 55 60
 Asp Val Cys Phe Phe Leu Lys Gln Ala Lys Arg Thr Ile Ile Asn
 65 70 75 80
 Leu Lys Ile Lys Lys
 85

<210> 6926

<211> 77

<212> PRT

<213> B.fragilis

<400> 6926

His	Phe	Tyr	Asn	Val	Val	Lys	Trp	Val	Tyr	Thr	Lys	Tyr	Val	Leu	Leu
1			5						10					15	
Tyr	Pro	Leu	Lys	Cys	Ser	Lys	Phe	His	Leu	Cys	Ala	Lys	Val	Gln	Ile
			20					25					30		
Leu	Phe	Tyr	Ile	Leu	Leu	Ile	Ser	Ile	Tyr	Arg	Tyr	Leu	Tyr	Gly	Ser
			35				40					45			
Ile	Asp	Asn	Ile	Gln	Leu	Ser	Met	Thr	Val	Ile	Ala	Asp	Trp	Val	Thr
	50					55					60				
Gly	Phe	Phe	Ala	Thr	Phe	Phe	Val	Arg	His	His	Ala	His			
65					70					75					

<210> 6927

<211> 941

<212> PRT

<213> B.fragilis

<400> 6927

Ile	Pro	Asp	Lys	Gln	Gly	Tyr	Arg	Pro	Ser	Gly	Arg	Val	Gln	Gly	Ser
1			5						10					15	
Glu	Gly	Ser	Val	Pro	Leu	His	Leu	Leu	Arg	Arg	Ser	Ala	Gly	Ser	Leu
			20					25					30		
Arg	Pro	Val	Arg	His	Pro	Leu	His	Gly	Arg	His	Arg	Pro	Val	Asp	Met
			35				40					45			
Tyr	Arg	Leu	Arg	Arg	Gly	Ile	Val	Phe	Arg	Pro	Arg	Met	Ala	Asp	Leu
	50					55					60				
Arg	Ala	Glu	Arg	Pro	Val	Arg	Arg	Ile	Arg	Ala	Asp	Glu	Ile	Gly	Ser
65					70					75					80
Gly	Lys	Glu	Pro	Ser	Pro	Ile	Pro	Tyr	Gln	Pro	Ala	Ala	Asp	His	Pro
				85					90					95	
Ile	Ile	Gln	Thr	Ala	Thr	Lys	Gly	Arg	Asn	Asp	Met	Arg	Asn	Thr	Ser
			100					105					110		
Lys	Met	Thr	Thr	Leu	Glu	Asn	Lys	Phe	Pro	Leu	Leu	Ala	Val	Glu	His
			115				120					125			
Gly	Cys	Ile	Ile	Ser	Lys	Asp	Ala	Asp	Ile	Thr	Val	Ala	Phe	Glu	Val
	130					135					140				
Glu	Leu	Pro	Glu	Leu	Tyr	Thr	Val	Thr	Asp	Ala	Glu	Tyr	Glu	Ala	Ile
145					150					155					160
His	Gly	Cys	Trp	Cys	Lys	Ala	Ile	Lys	Val	Leu	Pro	Asp	Phe	Cys	Val
				165					170					175	
Val	His	Lys	Gln	Asp	Trp	Phe	Ile	Lys	Glu	Lys	Tyr	Lys	Pro	Glu	Leu
			180					185					190		
Gln	Lys	Asp	Asp	Met	Ser	Phe	Leu	Ser	Arg	Ser	Phe	Glu	Arg	His	Phe
		195					200					205			
Asn	Glu	Arg	Pro	Tyr	Leu	Lys	His	Thr	Cys	Tyr	Leu	Tyr	Leu	Thr	Lys
	210					215					220				
Thr	Thr	Lys	Glu	Arg	Asn	Arg	Met	Gln	Ser	Asn	Phe	Ser	Thr	Leu	Cys
225					230					235					240
Arg	Gly	His	Ile	Ile	Pro	Lys	Glu	Leu	Asp	Lys	Glu	Thr	Ala	Gly	Lys
				245					250					255	
Phe	Met	Glu	Ala	Glu	Gln	Phe	Glu	Arg	Ile	Met	Asn	Asp	Ser	Gly	
			260				265					270			
Phe	Val	Arg	Leu	Arg	Arg	Leu	Ser	Thr	Asp	Glu	Ile	Val	Gly	Thr	Glu
			275				280					285			
Lys	Ser	Thr	Gly	Leu	Ile	Glu	Arg	Tyr	Phe	Ser	Leu	Met	Pro	Glu	Gly
	290					295					300				
Asp	Thr	Thr	Leu	Gln	Asp	Ile	Asp	Leu	Ser	Ala	Lys	Glu	Met	Arg	Ile

305					310					315				320
Gly	Asp	Asn	Arg	Leu	Cys	Leu	His	Thr	Leu	Ser	Asp	Ala	Glu	Asp
				325					330					335
Pro	Gly	Lys	Val	Ala	Thr	Asp	Ile	Arg	Tyr	Glu	Lys	Leu	Ser	Thr
			340					345						350
Arg	Ser	Asp	Cys	Arg	Leu	Ser	Phe	Ala	Ser	Pro	Val	Gly	Leu	Leu
		355					360					365		
Ser	Cys	Asn	His	Ile	Tyr	Asn	Gln	Tyr	Val	Ile	Ile	Asp	Asn	Ser
	370					375				380				
Glu	Asn	Leu	Gln	Lys	Phe	Glu	Lys	Ser	Ala	Arg	Asn	Met	Gln	Ser
385					390					395				400
Ser	Arg	Tyr	Ser	Arg	Ser	Asn	Ser	Ile	Asn	Arg	Glu	Trp	Ile	Asp
				405					410					415
Tyr	Leu	Asn	Glu	Ala	His	Ser	Tyr	Gly	Leu	Thr	Ser	Val	Arg	Ala
			420					425					430	
Phe	Asn	Val	Met	Ala	Trp	Ser	Asp	Asp	Ala	Glu	Glu	Leu	Lys	His
		435					440					445		
Lys	Asn	Asp	Val	Gly	Ser	Gln	Leu	Ala	Ser	Met	Glu	Cys	Val	Pro
	450					455					460			
His	Asn	Thr	Ile	Asp	Cys	Pro	Thr	Leu	Tyr	Trp	Ala	Ala	Met	Pro
465					470					475				480
Asn	Ala	Ala	Asp	Phe	Pro	Ala	Glu	Glu	Ser	Phe	His	Thr	Phe	Ile
			485						490					495
Gln	Ala	Val	Cys	Leu	Phe	Thr	Glu	Glu	Thr	Asn	Tyr	Arg	Ser	Ser
			500					505					510	
Ser	Pro	Phe	Gly	Ile	Lys	Met	Val	Asp	Arg	Leu	Thr	Gly	Lys	Pro
		515					520					525		
His	Leu	Asp	Ile	Ser	Asp	Leu	Pro	Met	Lys	Arg	Gly	Ile	Thr	Thr
	530					535					540			
Arg	Asn	Lys	Phe	Val	Leu	Gly	Pro	Ser	Gly	Ser	Gly	Lys	Ser	Phe
545					550					555				560
Met	Asn	His	Leu	Val	Arg	Gln	Tyr	Tyr	Glu	Gln	Gly	Thr	His	Val
				565					570					575
Leu	Val	Asp	Thr	Gly	Asn	Ser	Tyr	Gln	Gly	Leu	Cys	Glu	Met	Ile
		580						585					590	
Arg	Lys	Thr	Asn	Gly	Ala	Asp	Gly	Val	Tyr	Phe	Thr	Tyr	Thr	Glu
		595					600					605		
Lys	Pro	Ile	Ser	Phe	Asn	Pro	Phe	Tyr	Thr	Asp	Asp	Tyr	Val	Phe
	610					615					620			
Val	Glu	Lys	Lys	Asp	Ser	Ile	Lys	Thr	Leu	Leu	Leu	Thr	Leu	Trp
625					630					635				640
Ser	Glu	Asp	Asp	Lys	Val	Thr	Lys	Thr	Glu	Ser	Gly	Glu	Leu	Gly
				645					650					655
Ala	Val	Asn	Ala	Tyr	Ile	Glu	Arg	Ile	Arg	Ala	Asp	Arg	Ser	Ile
		660						665					670	
Pro	Ser	Phe	Asn	Thr	Phe	Tyr	Glu	Tyr	Met	Arg	Asp	Asp	Tyr	Arg
		675					680					685		
Glu	Leu	Ala	Glu	Arg	Glu	Ile	Lys	Val	Glu	Lys	Ser	Asp	Phe	Asn
	690					695					700			
Asp	Asn	Met	Leu	Thr	Thr	Met	Arg	Gln	Tyr	Tyr	Arg	Gly	Gly	Arg
705					710					715				720
Asp	Phe	Leu	Leu	Asn	Ser	Thr	Glu	Asn	Ile	Asp	Leu	Leu	Gly	Lys
				725					730					735
Phe	Ile	Val	Phe	Glu	Ile	Asp	Ser	Ile	Lys	Glu	Asn	Arg	Glu	Leu
			740					745					750	
Pro	Val	Val	Thr	Ile	Ile	Ile	Met	Glu	Ala	Phe	Ile	Asn	Lys	Met
		755					760					765		
Arg	Leu	Lys	Gly	Val	Arg	Lys	Gln	Leu	Ile	Val	Glu	Glu	Ala	Trp
	770					775								780

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Ala Leu Ser Ser Ala Asn Met Ala Glu Tyr Leu Arg Tyr Met Tyr Lys
 785 790 795 800
 Thr Val Arg Lys Tyr Tyr Gly Glu Ala Ile Val Val Thr Gln Glu Val
 805 810 815
 Asp Asp Ile Ile Ser Ser Pro Val Val Lys Glu Ser Ile Ile Asn Asn
 820 825 830
 Ser Asp Cys Lys Ile Leu Leu Asp Gln Arg Lys Tyr Met Asn Lys Phe
 835 840 845
 Asp Ala Ile Gln Ser Leu Leu Gly Leu Thr Glu Lys Glu Lys Ser Gln
 850 855 860
 Ile Leu Ser Ile Asn Met Ala Asn Asn Pro Ser Arg Leu Tyr Lys Glu
 865 870 875 880
 Val Trp Ile Gly Leu Gly Gly Thr Gln Ser Ala Val Tyr Ala Thr Glu
 885 890 895
 Val Ser Ala Glu Glu Tyr Leu Ala Tyr Thr Thr Glu Glu Thr Glu Lys
 900 905 910
 Val Glu Val Tyr Arg Leu Ala Glu Gln Leu Gly Gly Asp Ile Glu Ala
 915 920 925
 Ala Ile Arg Gln Leu Ala Glu Arg Arg Arg Lys Lys Glu
 930 935 940

<210> 6928

<211> 146

<212> PRT

<213> B.fragilis

<400> 6928

Ile Gln Ser Asn Met Ser Glu Lys Arg Arg Asn Lys Gly Gly Arg Asn
 1 5 10 15
 Pro Lys Leu Asp Pro Ala Val Phe Arg Tyr Thr Val Arg Phe Ser Glu
 20 25 30
 Glu Glu His Asn Arg Phe Leu Ser Met Phe Glu Lys Ser Gly Val Tyr
 35 40 45
 Ala Lys Ser Val Phe Leu Lys Ala His Phe Phe Gly Gln Pro Phe Lys
 50 55 60
 Val Leu Lys Val Asp Lys Thr Leu Val Asp Tyr Thr Lys Leu Ser
 65 70 75 80
 Asp Phe His Ala Gln Phe Arg Ala Ile Gly Thr Asn Tyr Asn Gln Val
 85 90 95
 Val Lys Glu Leu Arg Leu His Phe Ser Glu Lys Lys Ala Met Ala Leu
 100 105 110
 Leu Tyr Lys Leu Glu Gln Gln Thr Val Glu Leu Val Lys Leu Ser Arg
 115 120 125
 Lys Ile Val Glu Leu Ser Arg Glu Met Gln Glu Lys Trp Ser Gln Lys
 130 135 140
 Ser Val
 145

<210> 6929

<211> 94

<212> PRT

<213> B.fragilis

<400> 6929

Lys Cys Ile Lys Ile Met Gly Lys Lys Ile Phe Ala Thr Leu Ile Val
 1 5 10 15
 Ala Val Val Ala Thr Phe Ala Gly Tyr Asn Ile Tyr Gln Ser Gln Arg
 20 25 30
 Ala Lys Asn Thr Met Ser Glu Leu Ala Met Ala Asn Val Glu Ala Leu

35	40	45
Ala Asp Ile Asn Glu Thr Asp Ser Ser Gly Gln Thr Leu Tyr Cys Cys		
50	55	60
Gly Asn Glu Asp Thr Cys Ala Lys Gly Glu Asp Glu Asp Thr Gly Glu		
65	70	75
Glu Phe Ile Ile His Gly Val Leu Ser Ser Lys Lys Cys Lys		80
85	90	

<210> 6930
 <211> 313
 <212> PRT
 <213> B.fragilis

<400> 6930

Arg Leu Ile Lys Leu Tyr Ser Pro Met Ile His Ile Ala Cys Asn Ile		
1	5	10
Asp Ser Asn Phe Thr Val His Cys Ala Val Thr Leu Val Ser Leu Phe		
	20	25
Glu Asn Asn Arg Glu Ser Glu Phe Cys Ile His Ile Val Ala Ser Thr		30
	35	40
Leu Pro Ser Glu Asp Lys Glu Val Leu Lys Thr Ile Ala Gly Arg Tyr		45
50	55	60
Gly Asn Glu Val Arg Phe Tyr Phe Pro Pro Glu Asp Leu Leu His Asn		
65	70	75
Phe Ser Ile Lys Lys Phe Gly Lys Arg Ile Ser Met Ala Thr Tyr Tyr		80
	85	90
Arg Cys Met Phe Ser Ala Ile Leu Pro Glu Glu Val Asp Lys Val Leu		95
	100	105
Tyr Leu Asp Cys Asp Ile Val Ile Leu Gly Asp Ile Ser Glu Tyr Trp		110
	115	120
Asn Thr Asp Met Ser Asn Tyr Ser Val Ala Cys Val Glu Asp Ile Gly		125
	130	135
Ser Asn Glu Asp Glu Arg Tyr Asp Ile Leu Lys Tyr Asp Lys Ser Phe		140
145	150	155
Ser Tyr Phe Asn Ala Gly Val Leu Leu Ile Asn Leu Arg Tyr Trp Arg		160
	165	170
Glu His Lys Ile Asp Glu Gln Cys Glu Gln Tyr Phe Leu Arg Tyr Pro		175
	180	185
Glu Arg Ile Arg Phe Asn Asp Gln Asp Leu Leu Asn Ala Val Leu His		190
	195	200
Glu Ser Lys Leu Phe Val Pro Leu Lys Trp Asn Met Gln Asp Gly Phe		205
210	215	220
Tyr Arg Tyr Gly Ala Asp Lys Gly Val Lys Asp Lys Lys Gln Leu His		
225	230	235
Gln Gln Leu Leu His Pro Val Ile Leu His Tyr Thr Asn Lys Lys Pro		240
	245	250
Trp Asn Tyr Asp Ser Met His Pro Leu Lys Gly Glu Tyr Phe Lys Tyr		255
	260	265
Leu Asp Met Thr Pro Trp Lys Gly Lys Arg Pro Leu Ser Thr Phe Lys		270
	275	280
Ala Arg Leu Ser Trp Trp Leu Lys Ser Leu Pro Tyr Ala Leu Arg Leu		285
290	295	300
Arg Lys Pro Lys Tyr Val Asn Leu Ile		
305	310	

<210> 6931
 <211> 198
 <212> PRT
 <213> B.fragilis

<400> 6931

Trp	Leu	Ala	Asn	Glu	Arg	Leu	Leu	Pro	Tyr	Val	Val	Ser	Val	Thr	Lys
1				5					10					15	
Asn	Ser	Val	Thr	Met	Asn	Arg	Leu	Ile	Leu	Leu	Val	Glu	Ser	Arg	Ile
			20					25					30		
Arg	Gly	Asp	Val	Tyr	Val	Arg	Phe	Gly	Gly	Glu	Leu	Pro	Lys	Thr	His
		35					40					45			
Arg	Ser	Asn	Thr	Ala	Gly	Arg	Trp	Met	Leu	Ser	Leu	Pro	Leu	Lys	Ser
	50					55					60				
Val	Asn	Asn	Leu	Val	Lys	Asp	Ala	Arg	Lys	Val	Gln	Gln	Thr	Ile	Leu
65					70					75				80	
Met	Val	Gly	Asp	Ile	Thr	Asp	Thr	Tyr	Val	Thr	Ser	Phe	Gln	Arg	Met
				85				90						95	
Met	Arg	Asp	Asp	Asn	Phe	Thr	Val	Glu	Glu	Leu	Gly	Ala	Ile	Ala	Phe
			100					105					110		
Gly	Tyr	Thr	Lys	Leu	Leu	Glu	Glu	Ser	Asn	Asp	Val	Leu	Thr	Glu	Leu
		115				120						125			
Lys	Asn	Val	Val	Asn	Ile	Thr	Thr	Leu	Ser	Met	Thr	Asp	Lys	Glu	Arg
	130					135					140				
Met	Asp	Val	Val	Glu	Arg	Cys	Tyr	Ser	Lys	Met	Lys	Arg	Tyr	Arg	Asn
145					150					155					160
Leu	Val	Ser	Tyr	Tyr	Thr	Asn	Lys	Asn	Ile	Ser	Val	Ser	Tyr	Leu	Arg
				165					170					175	
Ala	Lys	Lys	Lys	Asn	Asp	Leu	Asp	Arg	Ile	Met	Gly	Leu	Tyr	Gly	Asn
			180					185						190	
Met	Asn	Glu	Arg	Tyr	Trp										
				195											

<210> 6932

<211> 269

<212> PRT

<213> B.fragilis

<400> 6932

Lys	His	Lys	Asn	Met	Lys	Thr	Arg	Ala	Leu	Arg	Ser	Tyr	Leu	Cys	Phe
1				5					10					15	
Thr	Leu	Leu	Ala	Thr	Ala	Phe	Leu	Leu	Gly	Leu	Ala	Gly	Cys	Asp	Lys
			20					25					30		
Glu	Glu	Ser	Glu	Pro	Leu	Arg	Ile	Gly	Asp	Asp	Ser	Phe	Asn	Asn	Ile
		35					40					45			
Glu	Asn	Gly	Val	Trp	Thr	Ala	Tyr	Tyr	Pro	Asn	Thr	Asn	Gln	Thr	Ser
	50					55					60				
Ile	Thr	Ile	Tyr	Gly	Gly	Val	Lys	Pro	Tyr	Thr	Val	Ser	Ser	Asn	Ser
65				70					75					80	
Asp	Ile	Leu	Lys	Val	Asn	Met	Asp	Lys	Leu	Ser	Asp	Ala	Phe	Asn	Tyr
				85				90						95	
Glu	Thr	Leu	Gly	Val	Gly	Asp	Ala	Glu	Val	Thr	Ile	Thr	Asp	Ala	Lys
			100					105					110		
Gly	Glu	Ser	Val	Gly	Leu	Lys	Val	Lys	Ile	Asp	Tyr	Arg	Ser	Asp	Lys
		115				120						125			
Met	Lys	Ile	Val	Lys	Leu	Asp	Ala	Tyr	Val	Lys	Gly	Asp	Lys	Met	Thr
	130					135					140				
Val	Ala	Ala	Gln	Lys	Glu	Leu	Lys	Glu	Lys	Ala	Leu	Ala	Ser	Ile	Pro
145				150					155						160
Val	Lys	Ala	Gly	Gly	Gly	Tyr	Gln	Phe	Ile	Tyr	Thr	Lys	Asp	Gln	Gly
				165					170					175	
Gly	Ile	Val	Tyr	Val	Tyr	Pro	Asp	Lys	Tyr	Gly	Glu	Lys	Tyr	Lys	Glu
			180					185						190	

Gly Thr Phe Thr Arg Ser Ser Leu Ala Val Gly Asn Ser Ser Tyr Arg
 195 200 205
 Lys Tyr Glu Ile Lys Leu Asp Gly Met Glu Arg Thr Tyr Ile Val Gln
 210 215 220
 Arg Tyr Tyr Pro Ser Lys Thr Arg Ser Val Ala Met Val Pro Tyr Gly
 225 230 235 240
 Phe Tyr Glu Asp Leu Leu Asp Gln Phe Thr Asp Asp Tyr Pro Glu Val
 245 250 255
 Glu Ser Val Tyr Thr Met Gln Val Val Ser Ala Val Phe
 260 265

<210> 6933
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 6933
 Tyr Met Lys Lys Tyr Ile Tyr Ala Phe Phe Phe Ala Ser Leu Ile Ile
 1 5 10 15
 Val Ala Leu Gly Leu Lys Ala Lys Ile Lys Ser Asp Thr Glu Phe Ser
 20 25 30
 Glu Leu Thr Leu Ser Asn Ile Glu Ala Leu Gly Met Glu Glu Thr Asp
 35 40 45
 Gly Ala Lys Asp Tyr Trp Cys Cys Gly Asn Glu Asp Val Cys Ala Glu
 50 55 60
 Gly Pro His Tyr Lys Ile Lys Gly Lys Leu Lys Glu Asn Pro Cys Lys
 65 70 75 80

<210> 6934
 <211> 299
 <212> PRT
 <213> B.fragilis

<400> 6934
 Ser Ser Arg Asn Thr Leu Asn Lys Val Val Leu Arg Asn Lys Ile Asp
 1 5 10 15
 Lys Ile Arg Leu Leu Phe Cys Lys Asp Arg Glu Ser Tyr Ser Cys Phe
 20 25 30
 Tyr Arg Ile Leu Gly Phe Tyr Pro Arg Asn Ile Arg Leu Tyr Glu Gln
 35 40 45
 Ala Leu Leu His Lys Ser Thr Ala Val Arg Ser Glu Lys Gly Arg Pro
 50 55 60
 Leu Asn Asn Glu Arg Leu Glu Phe Leu Gly Asp Ala Ile Leu Asp Ala
 65 70 75 80
 Ile Val Gly Asp Ile Val Tyr Gln His Phe Glu Gly Lys Arg Glu Gly
 85 90 95
 Phe Leu Thr Asn Thr Arg Ser Lys Ile Val Gln Arg Glu Thr Leu Asn
 100 105 110
 Lys Leu Ala Val Glu Ile Gly Leu Asp Lys Leu Ile Lys Tyr Ser Thr
 115 120 125
 Arg Ser Ser Ser His Asn Ser Tyr Met Tyr Gly Asn Ala Phe Glu Ala
 130 135 140
 Phe Ile Gly Ala Ile Tyr Leu Asp Arg Gly Tyr Glu Cys Cys Lys Gln
 145 150 155 160
 Phe Met Glu Arg Arg Ile Ile Glu Pro Tyr Ile Asp Leu Asp Lys Leu
 165 170 175
 Ser Arg Lys Glu Val Asn Phe Lys Ser Lys Leu Ile Glu Trp Ser Gln
 180 185 190
 Lys Asn Lys Met Glu Val Ser Phe Glu Leu Ile Glu Gln Ser Leu Asp

195 200 205
 Lys Glu Asn Asn Pro Val Phe Gln Thr Glu Val Arg Ile Glu Gly Ile
 210 215 220
 Leu Gly Gly Ser Gly Thr Gly Tyr Ser Lys Lys Glu Ser Gln Gln Asn
 225 230 235 240
 Ala Ala Gln Met Thr Leu Lys Lys Ile Lys Gly Asp Pro Glu Phe Met
 245 250 255
 Ala Ser Val Gln Glu Ala Lys Thr Gln Asn Asn Val Pro Ala Glu Asp
 260 265 270
 Thr Thr Pro Glu Ser Glu Met Ser Leu Thr Ala Glu Asn Gln Gln Ile
 275 280 285
 Asp Glu Ile Ile Ser Thr Glu Glu Ile Ser Val
 290 295

<210> 6935

<211> 101

<212> PRT

<213> B.fragilis

<400> 6935

Asn Val Leu Asn Met Glu Ile Val Ser Ile Glu Lys Lys Thr Phe Glu
 1 5 10 15
 Met Met Val Ala Ser Phe Asn Ala Leu Ser Glu Lys Val Ala Ala Leu
 20 25 30
 Arg Arg Lys Ser Asp Gly Gly Arg Leu Glu Arg Trp Leu Thr Gly Glu
 35 40 45
 Glu Val Cys Gly Gln Leu Arg Ile Ser Pro Arg Thr Leu Gln Thr Leu
 50 55 60
 Arg Asp Lys Arg Leu Ile Gly Tyr Ser Gln Ile Asn Arg Arg Phe Tyr
 65 70 75 80
 Tyr Lys Pro Glu Glu Val Arg Arg Leu Ile Pro Leu Ile Gly Thr Leu
 85 90 95
 Tyr Pro Gly Gly Arg
 100

<210> 6936

<211> 637

<212> PRT

<213> B.fragilis

<400> 6936

Lys Gln Leu Asn Asn Arg Lys Met Arg Lys Trp Arg Ile Glu Asp Ser
 1 5 10 15
 Glu Glu Leu Tyr Asn Ile Thr Gly Trp Gly Thr Ser Tyr Phe Gly Ile
 20 25 30
 Asn Asp Lys Gly His Val Val Val Thr Pro Arg Lys Asp Gly Val Ala
 35 40 45
 Val Asp Leu Lys Glu Leu Val Asp Glu Leu Gln Leu Arg Asp Val Ala
 50 55 60
 Ala Pro Met Leu Val Arg Phe Pro Asp Ile Leu Asp Asn Arg Ile Glu
 65 70 75 80
 Lys Thr Ala Tyr Cys Phe Lys Gln Ala Ser Glu Glu Tyr Gly Tyr Lys
 85 90 95
 Ala Gln Asn Phe Ile Ile Tyr Pro Ile Lys Val Asn Gln Met Arg Pro
 100 105 110
 Val Val Glu Glu Ile Ile Ser His Gly Lys Lys Phe Asn Leu Gly Leu
 115 120 125
 Glu Ala Gly Ser Lys Pro Glu Leu His Ala Val Ile Ala Val Asn Thr
 130 135 140

Asp	Ser	Asp	Ser	Leu	Ile	Ile	Cys	Asn	Gly	Tyr	Lys	Asp	Glu	Ser	Tyr
145					150					155					160
Ile	Glu	Leu	Ala	Leu	Leu	Ala	Gln	Lys	Met	Gly	Lys	Arg	Ile	Phe	Leu
				165						170					175
Val	Val	Glu	Lys	Met	Asn	Glu	Leu	Lys	Leu	Ile	Ala	Arg	Met	Ala	Lys
			180						185				190		
Gln	Leu	Asn	Val	Gln	Pro	Asn	Ile	Gly	Ile	Arg	Ile	Lys	Leu	Ala	Ser
		195					200					205			
Ser	Gly	Ser	Gly	Lys	Trp	Glu	Glu	Ser	Gly	Gly	Asp	Ala	Ser	Lys	Phe
	210					215					220				
Gly	Leu	Thr	Ser	Ser	Glu	Leu	Leu	Glu	Ala	Leu	Asp	Phe	Leu	Glu	Ser
225					230					235					240
Lys	Gly	Met	Lys	Asp	Cys	Leu	Lys	Leu	Ile	His	Phe	His	Ile	Gly	Ser
				245						250					255
Gln	Val	Thr	Lys	Ile	Arg	Arg	Ile	Lys	Thr	Ala	Leu	Arg	Glu	Ala	Ser
			260					265					270		
Gln	Phe	Tyr	Val	Gln	Leu	His	Ala	Met	Gly	Phe	Asn	Val	Glu	Phe	Val
		275					280					285			
Asp	Ile	Gly	Gly	Gly	Leu	Gly	Val	Asp	Tyr	Asp	Gly	Thr	Arg	Ser	Ser
	290					295					300				
Ser	Ser	Glu	Ser	Ser	Val	Asn	Tyr	Ser	Ile	Gln	Glu	Tyr	Val	Asn	Asp
305					310						315				320
Ser	Ile	Ser	Thr	Leu	Val	Asp	Ala	Ser	Asp	Lys	Asn	Gly	Ile	Pro	His
				325						330				335	
Pro	Asn	Ile	Ile	Thr	Glu	Ser	Gly	Arg	Ala	Leu	Thr	Ala	His	His	Ser
				340				345					350		
Val	Leu	Ile	Phe	Glu	Val	Leu	Glu	Thr	Ala	Thr	Leu	Pro	Gln	Trp	Asp
		355					360					365			
Asp	Glu	Glu	Glu	Ile	Ala	Pro	Asp	Ala	His	Glu	Leu	Val	Gln	Glu	Leu
	370					375					380				
Tyr	Gly	Ile	Trp	Asp	Thr	Leu	Asn	Gln	Asn	Lys	Met	Leu	Glu	Ala	Trp
385					390					395					400
His	Asp	Ala	Gln	Gln	Ile	Arg	Glu	Glu	Ala	Leu	Asp	Leu	Phe	Ser	His
				405					410					415	
Gly	Ile	Val	Asp	Leu	Lys	Thr	Arg	Ala	Gln	Ile	Glu	Arg	Leu	Tyr	Trp
			420					425					430		
Ser	Ile	Thr	Arg	Glu	Ile	Asn	Gln	Ile	Ala	Gly	Gly	Leu	Lys	His	Ala
		435					440					445			
Pro	Asp	Glu	Phe	Arg	Gly	Leu	Ser	Lys	Leu	Leu	Ala	Asp	Lys	Tyr	Phe
	450					455					460				
Cys	Asn	Phe	Ser	Leu	Phe	Gln	Ser	Leu	Pro	Asp	Ser	Trp	Ala	Ile	Asp
465					470					475					480
Gln	Ile	Phe	Pro	Ile	Met	Pro	Ile	Gln	Arg	Leu	Asp	Glu	Lys	Pro	Asp
				485					490					495	
Arg	Ser	Ala	Thr	Leu	Gln	Asp	Ile	Thr	Cys	Asp	Ser	Asp	Gly	Lys	Ile
			500					505					510		
Ala	Asn	Phe	Ile	Ser	Thr	Arg	Asn	Val	Ala	His	Tyr	Met	Pro	Val	His
		515					520					525			
Ser	Leu	Lys	Gln	Lys	Glu	Pro	Tyr	Tyr	Val	Ala	Val	Phe	Leu	Val	Gly
	530					535					540				
Ala	Tyr	Gln	Glu	Ile	Leu	Gly	Asp	Met	His	Asn	Leu	Phe	Gly	Asp	Thr
545					550					555					560
Asn	Ala	Val	His	Val	Ser	Val	Asn	Glu	Lys	Gly	Tyr	Asn	Ile	Glu	Gln
				565					570					575	
Ile	Ile	Asp	Gly	Glu	Thr	Val	Ala	Glu	Val	Leu	Asp	Tyr	Val	Gln	Tyr
			580					585					590		
Ser	Pro	Lys	Lys	Leu	Val	Arg	Thr	Leu	Glu	Thr	Trp	Val	Thr	Lys	Ser
		595					600					605			
Val	Lys	Glu	Gly	Lys	Ile	Ser	Val	Glu	Glu	Gly	Lys	Glu	Phe	Leu	Ser

610 615 620
 Asn Tyr Arg Ser Gly Leu Tyr Gly Tyr Thr Tyr Leu Glu
 625 630 635

<210> 6937
 <211> 488
 <212> PRT
 <213> B.fragilis

<400> 6937

Leu Ile Met Lys Lys Leu Phe Tyr Trp Ile Leu Ser Ser Ile Val Leu
 1 5 10 15
 Phe Ser Cys Ser Glu Thr Glu Leu Leu Asp Asn Ser Ile Asp Asp Gln
 20 25 30
 Leu Ile Thr Thr Arg Ala Ser Gly Asp Gly Leu Tyr Asp Val Leu Gly
 35 40 45
 Tyr Gly Tyr Asp Ile Thr Lys Glu Tyr Leu His Pro Met Ser Val Cys
 50 55 60
 Asn Pro Val Leu Asp Ile Glu Lys Tyr Lys Gln Asp Tyr Gly Glu Arg
 65 70 75 80
 Leu Val Thr Gly Thr Pro Ser Phe Gly Gly Asp Gln Met Tyr Tyr Gly
 85 90 95
 Tyr Ser Ala Phe Asp Tyr Leu Lys Asp Met Thr Lys Glu Thr Lys Ala
 100 105 110
 Ser Leu Gln Val Ser Asp Thr Ala Lys Gln Ala Ala Tyr Ser Gly Ser
 115 120 125
 Ile Ala Gly Gly Thr Tyr Phe Lys Ser Ala Tyr Ser Tyr Ser Ser Lys
 130 135 140
 Tyr Ser Phe Ala Ser Ile Asp Ala Val Arg Lys Leu Lys Tyr Ile Arg
 145 150 155 160
 Ile Asn Asp Glu Lys Ser Arg Leu Met Asn Tyr Leu Ser Ser Ser Phe
 165 170 175
 Lys Glu Asp Leu Asn Arg Leu Pro Ala Glu Lys Leu Val Lys Arg Tyr
 180 185 190
 Gly Thr His Val Leu Thr Asn Phe Thr Ile Gly Gly Arg Tyr Lys Leu
 195 200 205
 Leu Phe Arg Ser Val Ile Thr Asn Thr Thr Glu Asn Ser Val Lys Arg
 210 215 220
 Lys Thr Ile Ala Ser Gly Leu Lys Ala Leu Val Gly Asp Ile Gly Ile
 225 230 235 240
 Gly Val Asn Phe Asp Arg Asn Val Glu Thr Ser Glu Thr Leu Thr Arg
 245 250 255
 Glu Asn Lys His Arg Met Leu Tyr Val Leu Phe Tyr Gly Gly Thr Gly
 260 265 270
 Thr Ser Leu Val Tyr Asp Leu Glu Lys Gly Leu Pro Thr Arg Ile Asp
 275 280 285
 Ile Gln His Trp Glu Ser Thr Val Asn Leu Thr Asn Ala Asn Leu Thr
 290 295 300
 Asp Ile Asn Trp Glu Glu Thr Tyr Pro Ile Tyr Glu Phe Ile Gln Asp
 305 310 315 320
 Pro Gln Lys Arg Ala Glu Val Lys Asn Ala Val Asp Gln Tyr Ile Ala
 325 330 335
 Gly Gln Gln Ile Lys Val Leu Glu Leu Arg Pro Met Tyr Arg Met His
 340 345 350
 Ser Lys Arg Gln Lys Asn Thr Phe Tyr Val Phe Thr Lys Ser Asp Ala
 355 360 365
 Asp Tyr Ile Ser Lys Lys Trp Gly Asp Glu Ser Asn Gly Ile Asp Gly
 370 375 380
 Tyr Ile Cys Val Asn Pro Glu Pro Asn Thr Lys Pro Met Tyr Ser Leu

385		390		395		400
Phe Ser Lys Arg Ser Glu Asn Thr Phe Tyr Val Tyr Asp Lys Ala Glu						
		405		410		415
Val Asp Tyr Ile Val His Lys Trp Gly Asp Thr Phe Tyr Gly Leu Asp						
		420		425		430
Gly Tyr Met Leu Thr Lys Pro Glu Asp Asn Thr Lys Pro Val Tyr Cys						
		435		440		445
Leu His Ser Asn Arg Ala Lys Asn Thr Phe Phe Val Phe Asp Lys Gly						
		450		455		460
Glu Ala Asp Arg Ile Val Arg Glu Phe Gly Asp Thr Tyr Lys Gly Leu						
		465		470		475
Val Gly Tyr Phe Tyr Asp Ala Asp						480
		485				

<210> 6938

<211> 350

<212> PRT

<213> B.fragilis

<400> 6938

Pro Ile Met Lys Val Ile Val Asp Asn Lys Ile Pro Tyr Ile Arg Glu						
1		5		10		15
Ala Ile Glu Gln Ile Ala Asp Glu Val Ile Tyr Ala Pro Gly Lys Asp						
		20		25		30
Phe Thr Pro Glu Leu Val Gln Asp Ala Asp Ala Leu Ile Arg Thr						
		35		40		45
Arg Thr Arg Cys Asp Arg Ser Leu Leu Ala Gly Ser Lys Val Lys Phe						
		50		55		60
Ile Ala Thr Ala Thr Ile Gly Phe Asp His Ile Asp Thr Ala Tyr Cys						
		65		70		75
Arg Glu Ala Gly Ile Thr Trp Thr Asn Ala Pro Gly Cys Asn Ser Ala						
		85		90		95
Ser Val Ala Gln Tyr Ile Gln Ser Ala Leu Phe Ile Leu Gln Gln Thr						
		100		105		110
Arg Gly Met Lys Leu Asn Gln Met Thr Ile Gly Ile Val Gly Val Gly						
		115		120		125
Asn Val Gly Ser Lys Val Ala Asp Val Ala Arg Lys Leu Gly Ile Gln						
		130		135		140
Val Met Leu Asn Asp Leu Pro Arg Glu Glu Arg Glu Glu Ser Thr Met						
		145		150		155
Phe Ala Ser Leu Lys Ser Ile Ala Glu Lys Cys Asp Ile Ile Thr Phe						
		165		170		175
His Val Pro Leu Tyr Lys Glu Gly Lys Tyr Lys Thr Tyr His Leu Ala						
		180		185		190
Asp Lys His Phe Phe His Ser Leu Lys Lys Gly Ala Val Ile Met Asn						
		195		200		205
Thr Ser Arg Gly Glu Val Ile Glu Thr Glu Ala Leu Leu Glu Ala Leu						
		210		215		220
Arg Ser Gly Ile Leu Ser Asp Ala Val Ile Asp Val Trp Glu His Glu						
		225		230		235
Pro Asp Ile Asp Leu Glu Leu Leu Glu Lys Val Ile Ile Gly Thr Pro						
		245		250		255
His Ile Ala Gly Tyr Ser Ala Asp Gly Lys Ala Asn Ala Thr Arg Met						
		260		265		270
Ser Leu Glu Ala Leu Cys Arg Phe Leu Ile Glu Thr Asp Tyr Arg						
		275		280		285
Ile Thr Pro Pro Glu Pro Lys Asn Lys Leu Ile Ser Thr Ala Thr Tyr						
		290		295		300
Glu Glu Ala Ser Leu Met Ile Tyr Asp Pro Arg Arg Asp Ser Asp Ala						

305 310 315 320
 Leu Lys Ser His Pro Gly Leu Phe Glu Gln Leu Arg Gly Asp Tyr Pro
 325 330 335
 Leu Arg Arg Glu Glu Gly Ala Tyr Arg Ile Val Ile Thr Lys
 340 345 350

<210> 6939
 <211> 207
 <212> PRT
 <213> B.fragilis

<400> 6939
 Gln Asp Met Asn Tyr Phe Leu Leu Ala Glu Thr Asp Phe Phe Arg Arg
 1 5 10 15
 Ile Asn Glu Ala Gly Asp Cys Asn Met Glu Lys Ala Tyr Thr Val Phe
 20 25 30
 Ala Thr Gln Val Ile Glu Leu Cys Ile Gly Ser Pro Asp Thr Asn Arg
 35 40 45
 Thr Ile Ile Ala Leu Ala Tyr Ile Glu Ile Glu Leu Gln His His Pro
 50 55 60
 Val His Asn Leu Pro Glu Glu Lys Lys Glu Ile Ala Asn Tyr Val Ser
 65 70 75 80
 Lys Ala Leu Ser Phe Val Arg Lys Met Gln Lys Phe Leu Ala Ala Pro
 85 90 95
 Gln Val Pro Pro Leu Ile Pro Ile Gln Thr Ser Thr Asp Asn Thr Asn
 100 105 110
 Asp Asn Thr Ala Ser Pro Leu Gln Trp Thr Gly Asn Ala Ile Asp Leu
 115 120 125
 Val Glu Leu Ile Tyr Gly Ile Asn Glu Met Gly Cys Ile Asn Asn Gly
 130 135 140
 Asn Met Pro Leu Lys Gln Leu Ala Pro Leu Leu Tyr Lys Ile Phe Gly
 145 150 155 160
 Val Glu Ser Lys Asp Cys Tyr Arg Phe Tyr Ile Asp Ile Lys Arg Arg
 165 170 175
 Lys Asn Glu Ser Arg Thr Tyr Phe Leu Asp Lys Met Gln Glu Lys Leu
 180 185 190
 Asn Glu Lys Met Leu Arg Asp Glu Glu Met Glu Arg Met Arg Arg
 195 200 205

<210> 6940
 <211> 263
 <212> PRT
 <213> B.fragilis

<400> 6940
 Phe Val Met Lys Glu Lys Met Lys Glu Lys Leu Thr Val Ile Lys Val
 1 5 10 15
 Gly Gly Lys Ile Val Glu Glu Glu Ala Thr Leu Asn Gln Leu Leu Asn
 20 25 30
 Asp Phe Ala Ala Ile Glu Gly His Lys Val Leu Val His Gly Gly Gly
 35 40 45
 Arg Ser Ala Thr Lys Ile Ala Ala Gln Leu Gly Ile Asp Ser Lys Met
 50 55 60
 Val Asn Gly Arg Arg Ile Thr Asp Ala Glu Thr Leu Lys Val Val Thr
 65 70 75 80
 Met Val Tyr Gly Gly Leu Val Asn Lys Asn Ile Val Ala Gly Leu Gln
 85 90 95
 Ala Arg Gly Val Asn Ala Leu Gly Leu Thr Gly Ala Asp Met Asn Val
 100 105 110

Ile Arg Ser Met Lys Arg Pro Val Lys Glu Val Asp Tyr Gly Phe Val
 115 120 125
 Gly Asp Val Glu Arg Val Asp Ser Thr Leu Leu Ser Asp Leu Ile His
 130 135 140
 Lys Gly Val Val Pro Val Met Ala Pro Leu Thr His Asp Gly Gln Gly
 145 150 155 160
 Asn Met Leu Asn Thr Asn Ala Asp Thr Ile Ala Gly Glu Thr Ala Lys
 165 170 175
 Ala Leu Ser Ala Ile Phe Asp Val Thr Leu Val Tyr Cys Phe Glu Lys
 180 185 190
 Lys Gly Val Leu Arg Asp Glu Asn Asp Asp Glu Ser Val Ile Pro Gln
 195 200 205
 Ile Asn His Ala Glu Phe Gln Arg Tyr Ile Ala Glu Gly Val Ile Gln
 210 215 220
 Gly Gly Met Ile Pro Lys Leu Glu Asn Ser Phe Glu Ala Ile Asn Ala
 225 230 235 240
 Gly Val Ser Glu Val Val Ile Thr Leu Ala Ser Ala Ile His Thr Asp
 245 250 255
 Gly Gly Thr Arg Ile Lys Lys
 260

<210> 6941

<211> 505

<212> PRT

<213> B.fragilis

<400> 6941

Arg Ala Met Asn Ile Thr Lys Ile Ile Ser Lys Val Phe Asp Ser Arg
 1 5 10 15
 Leu Lys Ala Ile Asp Leu Tyr Asp Thr Gln Ala Gly Glu Ile Gln His
 20 25 30
 Arg Val Leu Thr Arg Leu Val Lys Gln Ala Glu Asn Thr Glu Trp Gly
 35 40 45
 Lys Lys Tyr Asp Tyr Lys Ser Ile Arg Asn Tyr Glu Asp Phe Lys Asn
 50 55 60
 Arg Leu Pro Ile Gln Thr Tyr Glu Glu Val Lys Pro Tyr Val Glu Arg
 65 70 75 80
 Leu Arg Ala Gly Glu Gln Asn Leu Leu Trp Pro Ser Glu Ile Arg Trp
 85 90 95
 Phe Ala Lys Ser Ser Gly Thr Thr Asn Asp Lys Ser Lys Phe Leu Pro
 100 105 110
 Val Ser Lys Glu Ala Leu Glu Asp Ile His Tyr Arg Gly Gly Lys Asp
 115 120 125
 Ala Ala Ala Ile Tyr Phe Arg Met Asn Pro Glu Ser Arg Phe Phe Ser
 130 135 140
 Gly Lys Gly Leu Ile Leu Gly Gly Ser His Ser Pro Asn Leu Asn Ser
 145 150 155 160
 Asn His Ser Leu Val Gly Asp Leu Ser Ala Ile Leu Ile Gln Asn Val
 165 170 175
 Ser Pro Leu Ile Asn Leu Ile Arg Val Pro Ser Lys Gln Ile Ala Leu
 180 185 190
 Met Asp Glu Trp Glu Ala Lys Ile Glu Ala Ile Ala Asn Ser Thr Ile
 195 200 205
 Pro Val Asp Val Thr Asn Leu Ser Gly Val Pro Ser Trp Met Leu Val
 210 215 220
 Leu Ile Lys Arg Ile Leu Glu Lys Thr Gly Lys Gln Thr Leu Glu Glu
 225 230 235 240
 Val Trp Pro Asn Leu Glu Val Phe Phe His Gly Gly Val Ala Phe Thr
 245 250 255

Pro Tyr Arg Glu Gln Tyr Arg Gln Val Ile His Ser Ser Lys Met His
 260 265 270
 Tyr Val Glu Thr Tyr Asn Ala Ser Glu Gly Tyr Phe Gly Thr Gln Asn
 275 280 285
 Asp Leu Ser Asp Pro Ser Met Leu Leu Met Ile Asp Tyr Gly Val Phe
 290 295 300
 Tyr Glu Phe Ile Pro Leu Glu Asp Val Glu Lys Glu Asn Pro Arg Thr
 305 310 315 320
 Tyr Cys Leu Glu Glu Val Glu Leu Asn Lys Asn Tyr Ala Met Val Ile
 325 330 335
 Ser Thr Ser Cys Gly Leu Trp Arg Tyr Met Ile Gly Asp Thr Val Lys
 340 345 350
 Phe Thr Arg Lys Asn Pro Tyr Lys Phe Val Ile Thr Gly Arg Thr Lys
 355 360 365
 His Phe Ile Asn Ala Phe Gly Glu Glu Leu Ile Val Asp Asn Ala Glu
 370 375 380
 Lys Gly Leu Ala Lys Ala Cys Ala Glu Thr Gly Ala Gln Val Ser Glu
 385 390 395 400
 Tyr Ser Ala Ala Pro Val Phe Met Asp Ala Asn Ala Lys Cys Arg His
 405 410 415
 Gln Trp Leu Ile Glu Phe Ala Lys Met Pro Asp Ser Ile Glu Lys Phe
 420 425 430
 Ala Met Ile Leu Asp Ala Thr Leu Lys Glu Val Asn Ser Asp Tyr Glu
 435 440 445
 Ala Lys Arg Trp Lys Asp Ile Ala Leu Gln Pro Leu Glu Val Ile Val
 450 455 460
 Ala Arg Lys Gly Leu Phe His Asp Trp Leu Ala Lys Lys Gly Lys Leu
 465 470 475 480
 Gly Gly Gln His Lys Val Pro Arg Leu Ser Asn Thr Arg Asp Tyr Ile
 485 490 495
 Glu Glu Met Ile Ala Leu Asn Glu Arg
 500 505

<210> 6942

<211> 173

<212> PRT

<213> B.fragilis

<400> 6942

Arg Leu Met Asn Met Asp Tyr Lys Tyr Ile Glu Gln Leu Leu Glu Arg
 1 5 10 15
 Tyr Trp Gln Cys Glu Thr Ser Leu Glu Glu Glu Ser Glu Leu Arg Ser
 20 25 30
 Phe Phe Ser Glu Glu Glu Val Pro Ala His Leu Leu Arg Tyr Lys Glu
 35 40 45
 Leu Phe Val Tyr Gln Thr Val Gln Gln Glu Ala Gly Leu Gly Lys Asp
 50 55 60
 Phe Asp Ala Arg Ile Leu Ala Gln Val Glu Ala Pro Val Val Lys Ala
 65 70 75 80
 Lys His Leu Thr Met Val Gly Arg Phe Met Pro Leu Phe Lys Ala Ala
 85 90 95
 Ala Val Val Ala Leu Ile Leu Ser Leu Gly Asn Val Ala Gln His Thr
 100 105 110
 Phe Phe Ala Glu Glu Ala Leu Asp Tyr Asn Tyr Asp Ala Tyr Lys Asp
 115 120 125
 Thr Tyr Asp Asp Pro Glu Val Ala Tyr Lys Gln Val Ser Ser Ala Leu
 130 135 140
 Met Met Leu Ser Glu Gly Ile Asn Lys Ser Gln Asp Gln Val Val Arg
 145 150 155 160

Asp Ser Val Lys Val Glu Pro Val Arg Val Met Lys Glu
165 170

<210> 6943
<211> 136
<212> PRT
<213> B.fragilis

<400> 6943
Thr Lys Ser Lys Asn Leu Arg Val Ala Pro Ser Lys Lys Arg Glu Ala
1 5 10 15
Met Lys Arg Asp Ile Ile Ile Ile Glu Asp Lys Ala Val Ser Val Thr
20 25 30
Gly Asn Glu Ile Trp Met Thr Ala Gly Glu Ile Ala Gly Leu Phe His
35 40 45
Thr Gly Val Pro Thr Val Asn Ala Ala Ile Lys Ala Ile Leu Lys Ala
50 55 60
Asp Val Leu Ser Asp Tyr Glu Val Cys Arg Tyr Ile Gln Leu Glu Asn
65 70 75 80
Gly Leu Tyr Ala Asp Val Tyr Ser Leu Glu Ile Ile Ile Pro Ile Ala
85 90 95
Phe Arg Leu Asn Thr Tyr Cys Thr His Val Phe Arg Thr Trp Leu Val
100 105 110
Gly Lys Ala Leu Ser Lys Glu Lys Arg Gln Ala Tyr Val Met Phe Ile
115 120 125
Gln Asn Gly Lys Ala Gly Tyr Cys
130 135

<210> 6944
<211> 599
<212> PRT
<213> B.fragilis

<400> 6944
His Pro Gln Asn Lys Ser Met Asp Ile Gln Leu Ser Ala Gln Gln Gln
1 5 10 15
Ala Val Val Asp Cys Asn Glu Pro Arg Ile Val Val Lys Ala Cys Pro
20 25 30
Gly Ser Gly Lys Thr Phe Ser Val Ala Ala Arg Met Ala Lys Leu Leu
35 40 45
Gln Glu Asn Asn Leu Ser Arg His Gln Gly Ile Ala Ala Ile Ser Phe
50 55 60
Thr Asn Thr Ala Cys Glu Val Ile Gln Lys Glu Leu Lys Glu Thr Phe
65 70 75 80
Gly Cys Arg Asn Ile Asp Tyr Pro Ser Phe Ile Gly Thr Ile Asp Ser
85 90 95
Phe Ile Asn Thr Tyr Ile Phe Leu Pro Tyr Ala His Leu Val Met Gly
100 105 110
Cys Asn Tyr Arg Pro Glu Ile Val Gly Thr Thr Phe Asn Lys Trp Phe
115 120 125
Asp Tyr Asp Pro Thr Gln Thr Arg Tyr Ile Arg Gly Lys Leu Gly Glu
130 135 140
Arg Ile Ile Thr Ser Arg Asp Ala Asn Tyr Tyr Phe Asp Leu Ile Ser
145 150 155 160
Phe Gly Leu Asn Asp Gln Leu Leu Arg Leu Ala Pro Tyr Gln Ala Tyr
165 170 175
His Phe Gly Lys Ala Asp Trp Asp Asn Pro Asn Lys Lys Asp Gly Ser
180 185 190
Pro Lys Lys Val Ile Ser Glu Leu Lys Glu Met Lys Trp Lys His Phe

195	200	205
Asn Ala Gly Lys Val	Asn Gln Ala Asp Ala Ile Tyr Phe Thr Phe Arg	
210	215	220
Ile Leu Asp Lys Tyr	Pro Ser Ile Ala Gln Asn Ile Val Arg Arg Phe	
225	230	235
Pro Ile Leu Ile Ile	Asp Glu Ala Gln Asp Thr Thr Glu Leu Gln Met	
245	250	255
Ala Ile Ile Asp Lys	Leu Ser Gln Cys Gly Ala Glu Ser Ile Met Leu	
260	265	270
Ile Gly Asp Pro Asp	Gln Ala Ile Phe Glu Trp Asn Thr Ala Asn Pro	
275	280	285
His Leu Phe Met Glu	Lys Tyr Asn Ser Pro Asp Trp His Ser Leu Asp	
290	295	300
Leu Ser Glu Asn Arg	Arg Ser Ser Glu Lys Ile Cys Gln Leu Ala Asn	
305	310	315
His Phe Ser Gly Asn	Glu Met Cys Ser Ile Ala Ser Asp Lys Asp Tyr	
325	330	335
Thr Asp Glu Pro Cys	Ile Lys Gly His Leu Asp Thr Pro Glu Ser Val	
340	345	350
Asn Gln Ile Thr Asn	His Phe Ile Glu Lys Cys Asn Glu Met Gly Leu	
355	360	365
Asp Glu Ser Glu Tyr	Ala Val Phe Arg Gly Gln Lys Phe Gly Glu	
370	375	380
Thr Asn Phe Gly Leu	Val Asn Asn Asp Asn Ser Ser Lys Gln Asn Ser	
385	390	395
Pro Trp Ile Asn Gly	His Tyr Gly Val Arg Asp Ile Val Tyr Gly Lys	
405	410	415
Tyr Leu Ile Asp His	Gly Lys Tyr Thr Asp Gly Leu Ser Leu Ile Glu	
420	425	430
Lys Gly Cys Tyr Lys	Ile Thr Lys Arg Val Arg Tyr Val Ser Ser Ser	
435	440	445
Thr Met Arg Arg Glu	Ile Ala Glu Val Gly Phe Arg Arg His Arg Ala	
450	455	460
Glu Met Phe Asp Phe	Ile Gln Lys Leu Pro Ser Thr Asn Asp Thr Leu	
465	470	475
Ser Asn Trp Ile Thr	Lys Leu Gln Gln Met Gly Ile Asn Leu Thr Val	
485	490	495
Asp Leu Gly Lys Ala	Asn Val Arg Ile Glu Ser Leu Phe Arg Thr Val	
500	505	510
Asn His Gln Phe Arg	Gln Glu Arg Pro Tyr Leu Lys Thr Ile His Ser	
515	520	525
Val Lys Gly Met Thr	Leu Glu Ala Ile Leu Val Phe Leu Ser Lys Lys	
530	535	540
Ala Val His Thr Asn	Tyr Thr Thr Ile Leu Asn Asn Pro Ala Lys Tyr	
545	550	555
Ser Val Asp Asn Asn	Glu Glu Leu Arg Ile Val Tyr Val Ala Cys Thr	
565	570	575
Arg Pro Lys Lys Leu	Leu Trp Ile Ala Val Pro Ser Asp Asp Ile Asp	
580	585	590
Cys Trp Arg Asn Lys	Leu Phe	
595		

<210> 6945

<211> 489

<212> PRT

<213> B.fragilis

<400> 6945

Ile Lys Phe Asp Gly Met Thr Lys Pro Leu Val Ser Val Val Ile Pro

1	5	10	15
Val Tyr Asn Met Glu Glu Phe Leu Glu Glu Thr Leu Asp Ser Val Leu			
20	25	30	
Ser Ser Asp Tyr Pro Asn Phe Glu Val Ile Val Met Asp Asp Gly Ser			
35	40	45	
Lys Asp Arg Ser Leu Glu Ile Ala Glu Ser Tyr Lys Ser Arg Tyr Glu			
50	55	60	
Asn Val Arg Val Tyr Thr Gln Val Asn Ser Gly Val Ala Thr Ala Arg			
65	70	75	80
Asn His Ala Ile Ser Lys Ala Gly Gly Val Tyr Ile Leu Pro Val Asp			
85	90	95	
Ala Asp Asn Arg Ile Ser Lys Glu Leu Ile His Ser Ala Val Asp Ile			
100	105	110	
Leu Glu Ser Glu Pro Glu Val Lys Val Val Cys Pro Arg Ala Glu Phe			
115	120	125	
Phe Gly Asp Arg Ser Gly Glu Trp Val Leu Pro Pro Phe Ser Leu Ser			
130	135	140	
Leu Leu Ala Arg Lys Asn Met Met Asp Thr Cys Ala Val Tyr Arg Lys			
145	150	155	160
Ser Glu Trp Glu Arg Ile Gly Gly Tyr Cys Ala Glu Ile Val Ala Arg			
165	170	175	
Glu Asp Trp Glu Phe Trp Ile Ser Met Leu Lys Asp Gly Gly Lys Val			
180	185	190	
Val Lys Leu Pro Glu Ile Gly Leu Phe Tyr Arg Val Arg Glu Gln Ser			
195	200	205	
Lys Arg Val Thr Asp Arg Leu Lys Lys His Val Ile Asp Val Leu			
210	215	220	
Asn Arg Arg His Pro Asp Phe Phe Glu Arg Glu Leu Gly Gly Pro Leu			
225	230	235	240
Arg Tyr Gln Arg Ser Trp Ser Arg Leu Ile Asn Arg Ile Ser Arg Ile			
245	250	255	
Ile His Pro Arg Arg Val Phe Val Gly Asp Asp Phe Gln Asp Leu Ser			
260	265	270	
Ser Phe Val Arg Val Leu Pro Val His Phe Glu Asn Gly Gly Thr Leu			
275	280	285	
Ile Tyr Glu Gly Arg Asn Lys Leu Lys Glu Phe Glu Ile His Gly Arg			
290	295	300	
Lys Leu Ile Val Lys Ser Tyr Gln Leu Pro His Leu Ile Asn Arg Val			
305	310	315	320
Val Tyr Asn Ser Phe Arg Ala Ser Lys Ala Arg Arg Ser Tyr Gln Tyr			
325	330	335	
Ala Gln Met Leu Arg Lys Ala Gly Ile Gly Ser Pro Ala Pro Val Gly			
340	345	350	
Phe Tyr Ser Thr Gly Thr Trp Leu Leu Phe Gly Arg Ser Tyr Phe Val			
355	360	365	
Ser Leu Lys Ser Glu Cys Pro Tyr Thr Tyr Arg Asn Leu Leu Glu Glu			
370	375	380	
Thr Phe Thr Gly Asp Lys Glu Lys Val Leu Arg Ala Ile Ala Arg Thr			
385	390	395	400
Thr Ala Ala Leu His Glu Asn Gly Phe Leu His Lys Asp Tyr Ser Gly			
405	410	415	
Gly Asn Ile Leu Phe Arg Glu Thr Asp Lys Gly Ile Glu Val Glu Ile			
420	425	430	
Ile Asp Leu Asn Arg Met Arg Phe Gly Lys Val Asp Ile Glu Thr Gly			
435	440	445	
Cys Lys Asn Phe Glu Arg Leu Pro Gly Thr His Glu Met Phe Val Ile			
450	455	460	
Leu Ala Asp Glu Tyr Ala Lys Val Arg Gly Phe Asp Ala Asp Arg Cys			
465	470	475	480

Leu Glu Leu Ile Glu Lys Ser His Leu
485

<210> 6946
<211> 343
<212> PRT
<213> B.fragilis

<400> 6946

Leu Phe Asn Asp Met Asn Asp Ser Leu Leu Tyr Lys Leu Ser Ser Gly
1 5 10 15
Lys Pro Pro Lys Phe Ile Tyr Phe Ile Ser Asn Thr Leu Asn Met Leu
20 25 30
Ile Pro Asn Ala Phe Tyr Arg Tyr Lys Leu Lys Ser Thr Leu Ala Gln
35 40 45
Leu Gln Tyr Arg Ser Asp Lys Asp Tyr Ile Glu Glu Arg Val Asn Tyr
50 55 60
Tyr Asn Lys Leu Ser Ser Pro Ser Ser Leu Pro Glu Lys Ser Phe Ile
65 70 75 80
Lys Asn Glu Phe Arg Tyr Leu Ile Phe Leu Gly Thr Leu Ala Asp Asn
85 90 95
Lys Lys Ser Leu Phe His Thr Ala Tyr Phe Phe Asp Thr Arg Glu Tyr
100 105 110
Thr Arg Trp Phe Lys Gln Ser Leu Arg Trp Gly Tyr Cys Pro Gly Asp
115 120 125
Val Tyr Phe Thr Pro Glu Phe Pro Ser Ile Val Lys Ser Arg Leu Leu
130 135 140
Thr Asp Ser Asn Asp Asn Ser Val Val Met Lys Leu Asp Lys Phe Arg
145 150 155 160
His Phe Met Phe Val Asn Asp Thr Met Pro Phe Ser Ser Lys Lys Asp
165 170 175
Met Val Ile Phe Arg Gly Lys Ile Arg Arg Ser Arg Thr Arg Lys Leu
180 185 190
Phe Leu Glu Met Tyr Met Asp His Pro Met Cys Asp Cys Gly Val Val
195 200 205
Gly Lys Asp Glu Gly Val Pro Asp Ala Trp Met Thr Pro Lys Lys Thr
210 215 220
Ile Arg Gln His Leu Asp Tyr Lys Phe Ile Met Ala Leu Glu Gly Asn
225 230 235 240
Asp Val Ala Ser Asn Leu Lys Trp Val Met Ser Ser Asn Ser Ile Ala
245 250 255
Val Met Pro Arg Pro Thr Cys Glu Thr Trp Phe Met Glu Gly Lys Leu
260 265 270
Ile Pro Asn Tyr His Tyr Ile Glu Ile Lys Pro Asp Phe Thr Asp Leu
275 280 285
Glu Glu Arg Leu Lys His Tyr Ile Glu His Pro Glu Glu Ala Gln Gln
290 295 300
Ile Ile Glu His Ala His Glu Tyr Val Ala Gln Phe Arg Asn Pro Arg
305 310 315 320
Arg Glu Lys Leu Ile Ser Leu Leu Val Leu Asp Lys Tyr Phe Arg Met
325 330 335
Thr Gly Gln Asn Ile Glu Asp
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<210> 6947
<211> 658
<212> PRT
<213> B.fragilis

<400> 6947

Lys Val Arg Phe Asp Asn Ala Ser Ile Val Val Tyr Tyr Cys Leu Ile
 1 5 10 15
 Gln Met Asn Ile Ile Asn Leu Gly Ile Leu Ala His Ile Asp Ala Gly
 20 25 30
 Lys Thr Ser Val Thr Glu Asn Leu Leu Phe Ala Ser Gly Ala Thr Glu
 35 40 45
 Lys Cys Gly Arg Val Asp Asn Gly Asp Thr Ile Thr Asp Ser Met Asp
 50 55 60
 Ile Glu Lys Arg Arg Gly Ile Thr Val Arg Ala Ser Thr Thr Ser Ile
 65 70 75 80
 Ile Trp Asn Gly Val Lys Cys Asn Ile Ile Asp Thr Pro Gly His Met
 85 90 95
 Asp Phe Ile Ala Glu Val Glu Arg Thr Phe Lys Met Leu Asp Gly Ala
 100 105 110
 Val Leu Ile Leu Ser Ala Lys Glu Gly Ile Gln Ala Gln Thr Lys Leu
 115 120 125
 Leu Phe Asn Thr Leu Gln Lys Leu Gln Ile Pro Thr Ile Ile Phe Ile
 130 135 140
 Asn Lys Ile Asp Arg Asp Gly Val Asn Leu Glu Arg Leu Tyr Leu Asp
 145 150 155 160
 Ile Lys Thr Asn Leu Ser Gln Asp Val Leu Phe Met Gln Thr Val Val
 165 170 175
 Asp Gly Leu Val Tyr Pro Ile Cys Ser Gln Thr Tyr Ile Lys Glu Glu
 180 185 190
 Tyr Lys Glu Phe Val Cys Asn His Asp Asp Asn Ile Leu Glu Arg Tyr
 195 200 205
 Leu Ala Asp Ser Glu Ile Ser Pro Ala Asp Tyr Trp Asn Thr Ile Ile
 210 215 220
 Asp Leu Val Ala Lys Ala Lys Val Tyr Pro Val Leu His Gly Ser Ala
 225 230 235 240
 Met Phe Asn Ile Gly Ile Asn Glu Leu Leu Asp Ala Ile Ser Ser Phe
 245 250 255
 Ile Leu Pro Pro Glu Ser Val Ser Asn Arg Leu Ser Ala Tyr Leu Tyr
 260 265 270
 Lys Ile Glu His Asp Pro Lys Gly His Lys Arg Ser Phe Leu Lys Ile
 275 280 285
 Ile Asp Gly Ser Leu Arg Leu Arg Asp Ile Val Arg Ile Asn Asp Ser
 290 295 300
 Glu Lys Phe Ile Lys Ile Lys Asn Leu Lys Thr Ile Tyr Gln Gly Arg
 305 310 315 320
 Glu Ile Asn Val Asp Glu Val Gly Ala Asn Asp Ile Ala Ile Val Glu
 325 330 335
 Asp Met Glu Asp Phe Arg Ile Gly Asp Tyr Leu Gly Thr Lys Pro Cys
 340 345 350
 Leu Ile Gln Gly Leu Ser His Gln His Pro Ala Leu Lys Ser Ser Val
 355 360 365
 Arg Pro Asp Arg Ser Glu Glu Arg Ser Lys Val Ile Ser Ala Leu Asn
 370 375 380
 Thr Leu Trp Ile Glu Asp Pro Ser Leu Ser Phe Ser Ile Asn Ser Tyr
 385 390 395 400
 Ser Asp Glu Leu Glu Ile Ser Leu Tyr Gly Leu Thr Gln Lys Glu Ile
 405 410 415
 Ile Gln Thr Leu Leu Glu Glu Arg Phe Ser Val Lys Val His Phe Asp
 420 425 430
 Glu Ile Lys Thr Ile Tyr Lys Glu Arg Pro Val Lys Lys Val Asn Lys
 435 440 445
 Ile Ile Gln Ile Glu Val Pro Pro Asn Pro Tyr Trp Ala Thr Ile Gly
 450 455 460

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Leu Thr Leu Glu Pro Leu Pro Leu Gly Thr Gly Leu Gln Ile Glu Ser
 465 470 475 480
 Asp Ile Ser Tyr Gly Tyr Leu Asn His Ser Phe Gln Asn Ala Val Phe
 485 490 495
 Glu Gly Ile Arg Met Ser Cys Gln Ser Gly Leu His Gly Trp Glu Val
 500 505 510
 Thr Asp Leu Lys Val Thr Phe Thr Gln Ala Glu Tyr Tyr Ser Pro Val
 515 520 525
 Ser Thr Pro Ala Asp Phe Arg Gln Leu Thr Pro Tyr Val Phe Arg Leu
 530 535 540
 Ala Leu Gln Gln Ser Gly Val Asp Ile Leu Glu Pro Met Leu Tyr Phe
 545 550 555 560
 Glu Leu Gln Ile Pro Gln Ala Ala Ser Ser Lys Ala Ile Thr Asp Leu
 565 570 575
 Gln Lys Met Met Ser Glu Ile Glu Asp Ile Ser Cys Asn Asn Glu Trp
 580 585 590
 Cys His Ile Lys Gly Lys Val Pro Leu Asn Thr Ser Lys Asp Tyr Ala
 595 600 605
 Ser Glu Val Ser Ser Tyr Thr Lys Gly Leu Gly Val Phe Met Val Lys
 610 615 620
 Pro Cys Gly Tyr Gln Ile Thr Lys Gly Asp Tyr Ser Asp Asn Ile Arg
 625 630 635 640
 Met Asn Glu Lys Asp Lys Leu Leu Phe Met Phe Gln Lys Ser Met Ser
 645 650 655
 Ser Lys

<210> 6948
 <211> 703
 <212> PRT
 <213> B.fragilis

<400> 6948
 Arg Gly Ser Leu His Pro Gly Asp Ala Ala Gln Glu Glu Lys Glu Glu
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 Ala Gln Gly Leu Gly Asp Val Ile Arg Ser Ile Asn Asn Gln Lys Asn
 20 25 30
 Gln Cys Met Ser Gln Gln Glu Asp Asp Leu Arg Ala Leu Ala Lys Ile
 35 40 45
 Met Asp Phe Leu Arg Ala Val Ser Ile Ile Leu Val Val Met Asn Val
 50 55 60
 Tyr Trp Phe Cys Tyr Glu Ala Ile Arg Leu Trp Gly Val Asp Ile Gly
 65 70 75 80
 Val Val Asp Arg Ile Leu Met Asn Phe Asn Arg Thr Ala Gly Leu Phe
 85 90 95
 Arg Ser Ile Leu Tyr Thr Lys Leu Phe Ala Val Leu Leu Leu Ala Leu
 100 105 110
 Ser Cys Leu Gly Thr Lys Gly Val Lys Gly Glu Lys Ile Thr Trp Gly
 115 120 125
 Arg Ile Trp Thr Ala Leu Ala Val Gly Phe Val Leu Phe Phe Leu Asn
 130 135 140
 Trp Trp Ile Leu Ala Leu Pro Leu Pro Ile Glu Ala Val Thr Gly Leu
 145 150 155 160
 Tyr Ile Leu Thr Val Gly Ala Gly Tyr Val Cys Leu Leu Met Gly Gly
 165 170 175
 Leu Trp Met Ser Arg Leu Leu Lys His Asn Leu Met Asp Asp Val Phe
 180 185 190
 Asn Asn Glu Asn Glu Ser Phe Met Gln Glu Thr Arg Leu Ile Glu Ser
 195 200 205

Glu	Tyr	Ser	Val	Asn	Leu	Pro	Thr	Arg	Phe	Tyr	Tyr	Lys	Lys	Arg	Trp
210						215					220				
Asn	Asn	Gly	Trp	Ile	Asn	Val	Val	Asn	Pro	Phe	Arg	Ala	Ser	Ile	Val
225					230					235					240
Leu	Gly	Thr	Pro	Gly	Ser	Gly	Lys	Ser	Tyr	Ala	Val	Val	Asn	Asn	Phe
				245					250					255	
Ile	Lys	Gln	Gln	Ile	Glu	Lys	Gly	Phe	Ser	Met	Tyr	Val	Tyr	Asp	Phe
			260					265					270		
Lys	Phe	Ser	Asp	Leu	Ser	Thr	Ile	Ala	Tyr	Asn	His	Leu	Leu	Asn	His
		275					280					285			
Pro	Glu	Gly	Tyr	Lys	Val	Lys	Pro	Lys	Phe	Tyr	Val	Ile	Asn	Phe	Asp
	290					295					300				
Asp	Pro	Arg	Arg	Ser	His	Arg	Cys	Asn	Pro	Ile	His	Pro	Asp	Phe	Met
305				310						315					320
Glu	Asp	Ile	Thr	Asp	Ala	Tyr	Glu	Ser	Ala	Tyr	Thr	Ile	Met	Leu	Asn
				325					330					335	
Leu	Asn	Lys	Ser	Trp	Val	Gln	Lys	Gln	Gly	Asp	Phe	Phe	Val	Glu	Ser
			340					345					350		
Pro	Ile	Ile	Leu	Phe	Ala	Ala	Ile	Ile	Trp	Tyr	Leu	Lys	Ile	Phe	Arg
	355						360					365			
Asn	Gly	Lys	Tyr	Cys	Thr	Phe	Pro	His	Ala	Ile	Glu	Phe	Leu	Asn	Arg
370						375					380				
Arg	Tyr	Glu	Asp	Ile	Phe	Pro	Ile	Leu	Thr	Ser	Tyr	Pro	Glu	Leu	Glu
385					390					395					400
Asn	Tyr	Leu	Ser	Pro	Phe	Met	Asp	Ala	Trp	Leu	Gly	Gly	Ala	Ala	Glu
				405					410					415	
Gln	Leu	Met	Gly	Gln	Ile	Ala	Ser	Ala	Lys	Ile	Pro	Leu	Ser	Arg	Met
			420					425					430		
Ile	Ser	Pro	Gln	Leu	Tyr	Trp	Val	Met	Ser	Asp	Ser	Glu	Phe	Thr	Leu
	435						440					445			
Asp	Ile	Asn	Asn	Pro	Glu	Glu	Pro	Lys	Ile	Leu	Cys	Val	Gly	Asn	Asn
450						455					460				
Pro	Asp	Arg	Gln	Asn	Ile	Tyr	Gly	Ala	Ala	Leu	Gly	Leu	Tyr	Asn	Ser
465				470						475					480
Arg	Ile	Val	Lys	Leu	Ile	Asn	Lys	Lys	Gly	Met	Leu	Lys	Ser	Ser	Val
			485						490					495	
Ile	Ile	Asp	Glu	Leu	Pro	Thr	Ile	Tyr	Phe	Lys	Gly	Leu	Asp	Asn	Leu
		500						505					510		
Ile	Ala	Thr	Ala	Arg	Ser	Asn	Lys	Val	Ala	Val	Cys	Leu	Gly	Phe	Gln
	515						520					525			
Asp	Phe	Ser	Gln	Leu	Val	Arg	Asp	Tyr	Gly	Asp	Lys	Glu	Ala	Lys	Val
530						535					540				
Val	Met	Asn	Thr	Val	Gly	Asn	Ile	Phe	Ser	Gly	Gln	Val	Val	Gly	Glu
545					550					555					560
Thr	Ala	Lys	Thr	Leu	Ser	Glu	Arg	Phe	Gly	Lys	Val	Leu	Gln	Lys	Arg
				565					570					575	
Gln	Ser	Ile	Ser	Ile	Asn	Arg	Gln	Asp	Val	Ser	Thr	Ser	Ile	Asn	Thr
			580					585					590		
Gln	Met	Asp	Ala	Leu	Ile	Pro	Pro	Ser	Lys	Ile	Ser	Gly	Leu	Thr	Gln
	595					600						605			
Gly	Met	Phe	Val	Gly	Ser	Val	Ser	Asp	Asn	Phe	Asn	Glu	Arg	Ile	Glu
610					615						620				
Gln	Lys	Ile	Phe	His	Cys	Glu	Ile	Val	Val	Asp	Ala	Glu	Lys	Val	Lys
625					630					635					640
Arg	Glu	Glu	Lys	Ala	Tyr	Lys	Lys	Ile	Pro	Val	Ile	Thr	Asp	Phe	Thr
			645						650					655	
Asp	Glu	Asn	Gly	Asn	Asp	Arg	Met	Lys	Glu	Thr	Val	Gln	Glu	Asn	Tyr
			660					665					670		
Arg	Arg	Ile	Lys	Glu	Glu	Val	Lys	Gln	Ile	Val	Gln	Glu	Glu	Leu	Glu

675 680 685
 Arg Ile Ala Asn Asp Glu Asn Leu Lys His Leu Leu Gln Gln Lys
 690 695 700

<210> 6949
 <211> 249
 <212> PRT
 <213> B.fragilis

<400> 6949
 Ala Val Gly Glu Asp Tyr Lys Thr Arg Ile Leu Arg Asn Gly Tyr Ser
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 Leu Arg Thr Tyr Tyr His Arg Leu Ser Val Glu Tyr Thr Lys Met Arg
 20 25 30
 Glu Tyr Ala Lys Ala Lys Glu Cys Ile Asp Lys Met Leu Ala Glu Lys
 35 40 45
 Met Asp Asp Leu Thr Cys Glu Ala Cys Glu Leu Asn Phe Met Leu Asp
 50 55 60
 Tyr Tyr Leu Glu Thr Gly Gln Phe Glu Glu Ala Tyr Asn Arg Ala Gln
 65 70 75 80
 Pro Leu Ile Thr Arg Gln Val Ser Cys Tyr Glu Ala Asn Leu Arg Ala
 85 90 95
 Tyr Met Lys Leu Ala Tyr Tyr Ala Cys Lys Ala Gly Lys Pro Glu Ile
 100 105 110
 Ala Ala Asp Met Cys Ala Arg Ala Glu Glu Ala Leu Val Gly Arg Glu
 115 120 125
 Lys Asp Glu Tyr Leu Leu Leu Tyr Leu Gly Leu Phe Ile Ala Tyr Tyr
 130 135 140
 Phe Met Thr His Pro Asp Arg Gly Trp Glu Tyr Ala Glu Arg Cys Ile
 145 150 155 160
 Pro Trp Ser Leu Asn Thr Asn Met Gln Lys Lys Tyr Arg Phe Ser Cys
 165 170 175
 Asp Met Val Glu Ala Leu Ser Tyr Glu Ser His Glu Glu Val Ser Leu
 180 185 190
 Ser Leu Pro Glu Glu Phe Pro Leu Tyr Arg Ala Asp Gly Ile Tyr Ser
 195 200 205
 Val Ala Ala Leu Arg Asp Tyr Phe Tyr Lys Gln Ala Thr Gln Leu Ala
 210 215 220
 Ser Leu Tyr Asp Thr Arg Asn Gly Asn Asn Gly Tyr Gln Glu Arg Leu
 225 230 235 240
 Phe Asn Val Asn Leu Ile Gly Asn Leu
 245

<210> 6950
 <211> 233
 <212> PRT
 <213> B.fragilis

<400> 6950
 Phe Leu Leu Asp Ile Leu Ser Met Arg Ile Leu Tyr Val Leu Phe Phe
 1 5 10 15
 Leu Leu Thr Leu Asn Ser Cys Gln Lys Val Lys Glu Lys Glu Val Val
 20 25 30
 Arg Leu Met Lys Glu Trp Asn Arg Lys Glu Val Leu Phe Pro Asp Asp
 35 40 45
 Leu Leu Phe Thr Val Leu Glu Lys Asp Thr Leu Lys Glu Ile Pro Lys
 50 55 60
 Ser Asp Tyr Thr Ile Ile Thr Tyr Val Asp Ser Ile Gly Cys Thr Ser
 65 70 75 80

Cys Lys Leu Lys Leu Gln Asn Trp Leu Leu Leu Glu Arg Lys Leu Arg
 85 90 95
 Ser Ile Thr Asn Lys Arg Val Ser Cys Leu Phe Val Ile His Pro Lys
 100 105 110
 Ser Lys Lys Glu Val Asn Tyr Ile Leu Gln Glu Asn His Phe Asp Cys
 115 120 125
 Pro Val Cys Ile Asp Asp Ser Asp Ile Phe Asn Lys Leu Asn Lys Phe
 130 135 140
 Pro Ala Asn Ile Met Tyr Gln Thr Phe Leu Leu Asp Ala Gly Asn Lys
 145 150 155 160
 Val Val Ala Ile Gly Asn Pro Ile His Asn Asp Arg Ile Lys Lys Leu
 165 170 175
 Tyr Leu Asp Ile Ile Ser Gly Asn Lys Met Thr Ser Lys Lys Gly Ser
 180 185 190
 Met Gln Thr Glu Ile Thr Val Ser Glu Thr Leu Phe Asp Phe Gly Lys
 195 200 205
 Ile Ser Phe Lys Glu Ser Gln Lys Cys Ile Phe Met Leu Gln Ser Tyr
 210 215 220
 Tyr Lys Lys Val Glu Cys Gly Arg Met
 225 230

<210> 6951

<211> 599

<212> PRT

<213> B.fragilis

<400> 6951

Lys Leu Leu Glu Glu Asp Asn Asp Lys Asn Arg Met Glu Lys Glu Gly
 1 5 10 15
 Asn Asn Leu Phe Gln Val Asn Leu Lys Gly Met Ile Ala Leu Leu Ser
 20 25 30
 Glu His Ile Tyr Ser Asn Pro Asn Thr Phe Val Arg Glu Leu Leu Gln
 35 40 45
 Asn Ser Val Asp Ala Ile Thr Ala Leu His Asn Ile Asp Glu Asn Tyr
 50 55 60
 Ser Gly Arg Ile Asp Val Phe Leu Asn Gly Asp Gly Ser Met Val Phe
 65 70 75 80
 Gln Asp Asn Gly Ile Gly Leu Lys Glu Glu Val Tyr Arg Phe Leu
 85 90 95
 Thr Val Ile Gly Glu Ser Ser Lys Arg Asp Thr Pro Asp Ala Asp Asp
 100 105 110
 Phe Ile Gly Arg Phe Gly Ile Gly Leu Leu Ser Cys Phe Val Val Thr
 115 120 125
 Asn Glu Ile Arg Val Glu Ser Arg Ser Ala Met Gly Gly Asn Pro Val
 130 135 140
 Cys Trp Cys Gly Lys Val Asp Gly Thr Tyr Gln Thr Thr Phe Pro Asp
 145 150 155 160
 Glu Glu Trp Glu Ile Gly Ser Arg Val Val Leu Arg Pro Lys Asn Glu
 165 170 175
 Trp Ala His Leu Phe Glu Tyr Glu Val Phe Lys Lys Ile Leu Val Asn
 180 185 190
 Tyr Gly Glu Val Leu Pro Tyr Pro Val Tyr Leu His Arg Gly Glu Glu
 195 200 205
 Glu Glu Leu Val Asn Thr Pro Ser Pro Val Trp Leu Asp Pro Lys Ala
 210 215 220
 Thr Arg Lys Glu Leu Leu Asp Tyr Gly Thr Lys Val Phe Gln Ser Ser
 225 230 235 240
 Ala Leu Asp Ala Phe Pro Ile Arg Thr Glu His Gly Arg Ile Glu Gly
 245 250 255

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Val	Leu	Tyr	Val	Leu	Pro	Phe	Arg	Thr	Gln	Phe	Ser	Val	Arg	Asn	Ser
			260					265					270		
His	Lys	Val	Tyr	Leu	Lys	Arg	Met	Leu	Leu	Ser	Glu	Asp	Asp	Cys	Asn
			275				280					285			
Leu	Leu	Pro	Ser	Trp	Ala	Phe	Phe	Ile	Arg	Cys	Leu	Val	Asn	Ala	Asp
			290			295					300				
Gly	Leu	Leu	Ser	Thr	Ala	Ser	Arg	Glu	Ser	Phe	Val	Ser	Asn	Asp	Ser
305					310					315				320	
Leu	Lys	Asp	Ala	Arg	Lys	Glu	Ile	Gly	Val	Ala	Ile	Lys	Glu	Tyr	Leu
			325					330					335		
Arg	Ala	Leu	Val	Gln	Asn	Asn	Arg	Ser	Val	Phe	Asn	Lys	Ile	Leu	Asp
			340				345						350		
Val	His	His	Phe	His	Ile	Lys	Ala	Ile	Ala	Ser	Glu	Asp	Asn	Glu	Leu
			355				360					365			
Leu	Arg	Leu	Phe	Met	Asp	Tyr	Leu	Pro	Phe	Glu	Thr	Asn	Lys	Gly	Ile
			370			375					380				
Arg	Ser	Phe	Gly	Ser	Ile	Arg	Ser	Ser	Asn	Asn	Thr	Ile	Tyr	Tyr	Thr
385					390					395					400
Arg	Asn	Leu	Glu	Asp	Phe	Arg	Gln	Val	Arg	Arg	Ile	Ala	Gly	Ala	Gln
			405					410					415		
Gly	Arg	Leu	Val	Val	Asn	Ala	Ala	Tyr	Thr	Phe	Asp	Glu	Thr	Leu	Leu
			420				425						430		
Lys	Lys	Tyr	Ile	Arg	Leu	Asn	Gln	Glu	Leu	Ser	Leu	Glu	Glu	Ile	Ser
		435				440					445				
Pro	Ala	Arg	Leu	Leu	Glu	Glu	Phe	Ala	Glu	Val	Glu	Gly	Asn	Lys	Glu
		450				455					460				
His	Arg	Ser	Phe	Glu	Thr	Lys	Ala	Ser	Glu	Leu	Leu	Lys	Arg	Phe	Gly
465					470				475						480
Cys	Ile	Cys	Arg	Leu	Lys	His	Phe	Thr	Pro	Val	Asp	Thr	Pro	Val	Ile
			485					490					495		
Phe	Val	Ala	Glu	Glu	Lys	Glu	Glu	Asn	Ser	Lys	Val	Ala	Asn	Asn	Pro
			500				505					510			
Leu	Ala	Ala	Val	Leu	Gly	Ser	Val	Asn	Ala	Lys	Lys	Arg	Leu	Pro	Pro
			515				520					525			
Thr	Leu	Thr	Phe	Asn	Ala	Asp	Asn	Glu	Met	Val	Gln	Thr	Leu	Leu	Arg
			530			535					540				
Ile	Gln	Gly	Asp	Asn	Lys	Leu	Phe	Gln	His	Val	Val	His	Ile	Leu	Tyr
545					550				555						560
Val	Gln	Ser	Leu	Leu	Gln	Gly	Lys	Tyr	Pro	Val	Asn	Ser	Glu	Glu	Met
			565					570					575		
Glu	Leu	Phe	Asn	His	Ser	Leu	Ser	Glu	Leu	Met	Thr	Ala	Lys	Met	Asn
			580				585					590			
Asp	Phe	Ile	Asn	Phe	Leu	Asn									
			595												

<210> 6952

<211> 209

<212> PRT

<213> B.fragilis

<400> 6952

Ile	Thr	Met	Glu	Phe	Lys	Ser	Leu	Lys	Asn	Ile	Glu	Ser	Ser	Phe	Arg
1				5					10					15	
Gln	Ile	Arg	Leu	Phe	Gly	Ile	Val	Phe	Leu	Ser	Leu	Cys	Ala	Val	Ile
			20					25					30		
Thr	Val	Trp	Ser	Val	Trp	Ser	Ser	Tyr	Arg	Phe	Ala	Glu	Arg	Gln	Arg
			35			40						45			
Glu	Lys	Ile	Tyr	Val	Leu	Asp	Asn	Gly	Lys	Ser	Leu	Met	Leu	Ala	Leu
			50			55					60				

Ser Gln Asp Leu Ser Gln Asn Arg Pro Ala Glu Ala Arg Glu His Val
65 70 75 80
Arg Arg Phe His Glu Leu Phe Phe Thr Leu Ser Pro Glu Lys Ser Ala
85 90 95
Ile Glu His Asn Val Lys Arg Ala Leu Leu Leu Ala Asp Lys Ser Val
100 105 110
Tyr Asn Tyr Tyr Ser Asp Phe Ala Glu Lys Gly Tyr Tyr Asn Arg Ile
115 120 125
Ile Ala Gly Asn Ile Asn Gln Val Leu Lys Val Asp Ser Val Val Cys
130 135 140
Asp Phe Asn Gly Tyr Pro Tyr Arg Ala Val Thr Tyr Ala Thr Gln Lys
145 150 155 160
Ile Ile Arg Gln Ser Asn Val Thr Glu Arg Ser Leu Val Thr Thr Cys
165 170 175
Arg Leu Leu Asn Ser Ser Arg Ser Asp Asp Asn Pro Asn Gly Phe Thr
180 185 190
Ile Glu Gly Phe Thr Ile Ile Glu Asn Lys Asp Leu Gln Thr Ile Lys
195 200 205
Arg

<210> 6953
<211> 612
<212> PRT
<213> B.fragilis

<400> 6953
Val Met Lys Glu Phe Phe Gln Leu Met Lys Arg Phe Val Pro Pro Tyr
1 5 10 15
Lys Lys Tyr Val Ile Trp Ala Leu Val Leu Asn Leu Leu Ser Ala Ile
20 25 30
Leu Asn Ile Phe Ser Phe Ser Leu Ile Ala Pro Ile Leu Gln Ile Leu
35 40 45
Phe Lys Val Asp Lys Asp Val Tyr Glu Phe Ile Pro Trp Asp Thr Val
50 55 60
Thr Ile Ser Thr Lys Asp Leu Leu Ile Asn Asn Phe Tyr Tyr Tyr Val
65 70 75 80
Ser Ala Met Ile Gln Ala Asn Gly Ala Ser Phe Thr Leu Met Ile Leu
85 90 95
Gly Leu Phe Leu Val Val Met Thr Phe Phe Lys Thr Phe Cys Tyr Phe
100 105 110
Ala Ser Ser Ala Val Met Ile Pro Leu Arg Thr Gly Val Val Arg Asp
115 120 125
Ile Arg Val Met Val Tyr Asp Lys Val Leu Arg Leu Pro Leu Gly Phe
130 135 140
Phe Ser Glu Glu Arg Lys Gly Asp Ile Ile Ala Arg Met Ser Gly Asp
145 150 155 160
Val Gly Glu Ile Glu Asn Ser Val Thr Ser Ser Leu Asp Met Leu Val
165 170 175
Lys Asn Pro Ile Leu Ile Ile Ala Tyr Phe Thr Thr Leu Leu Val Ile
180 185 190
Ser Trp Gln Leu Thr Leu Phe Thr Leu Leu Val Val Pro Leu Met Gly
195 200 205
Trp Val Met Gly Thr Val Gly Lys Lys Leu Lys Arg Gln Ser Leu Glu
210 215 220
Ala Gln Ala Lys Trp Ser Asp Thr Met Ser Gln Leu Glu Glu Thr Leu
225 230 235 240
Gly Gly Leu Arg Ile Ile Lys Ala Phe Ile Ala Glu Asn Lys Met Ile
245 250 255

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

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Asn Arg Phe Leu Lys Cys Ser Asn Glu Phe Arg Asp Ala Thr Asn Lys
260 265 270
Val Ala Thr Arg Gln Ala Leu Ala His Pro Met Ser Glu Phe Leu Gly
275 280 285
Thr Thr Met Ile Val Ile Val Leu Trp Phe Gly Gly Ser Leu Ile Leu
290 295 300
Ser Ser His Ser Ser Ile Asp Ala Ser Thr Phe Met Val Tyr Leu Thr
305 310 315 320
Ile Leu Tyr Ser Val Ile Asn Pro Leu Lys Glu Phe Ser Lys Ala Gly
325 330 335
Tyr Asn Ile Pro Lys Gly Leu Ala Ser Met Glu Arg Val Asp Lys Ile
340 345 350
Leu Lys Ala Glu Asn Lys Ile Val Glu Ile Pro Asn Pro Lys Pro Leu
355 360 365
Asn Gly Leu Glu Glu Gln Val Glu Phe Lys Asp Ile Ser Phe Ser Tyr
370 375 380
Asp Gly Lys Lys Glu Val Leu Gln His Ile Asn Leu Thr Val Pro Lys
385 390 395 400
Gly Lys Thr Ile Ala Leu Val Gly Gln Ser Gly Ser Gly Lys Ser Thr
405 410 415
Leu Val Asp Leu Leu Pro Arg Tyr His Asp Val Gln Glu Gly Thr Ile
420 425 430
Thr Ile Asp Gly Val Asn Ile Lys Asp Val Arg Ile Ser Asp Leu Arg
435 440 445
Ser Leu Ile Gly Asn Val Asn Gln Glu Ala Ile Leu Phe Asn Asp Thr
450 455 460
Phe Phe Asn Asn Ile Ala Phe Gly Val Glu Asn Ala Thr Met Glu Gln
465 470 475 480
Val Ile Glu Ala Ala Lys Ile Ala Asn Ala His Asp Phe Ile Met Glu
485 490 495
Lys Glu Asp Gly Tyr His Thr Asn Ile Gly Asp Arg Gly Ser Lys Leu
500 505 510
Ser Gly Gly Gln Arg Gln Arg Ile Ser Ile Ala Arg Ala Ile Leu Lys
515 520 525
Asn Pro Pro Ile Leu Ile Leu Asp Glu Ala Thr Ser Ala Leu Asp Thr
530 535 540
Glu Ser Glu Arg Leu Val Gln Glu Ala Leu Glu Arg Leu Met Lys Thr
545 550 555 560
Arg Thr Thr Ile Ala Ile Ala His Arg Leu Ser Thr Ile Lys Asn Ala
565 570 575
Asp Glu Ile Cys Val Leu Tyr Glu Gly Glu Ile Val Glu Arg Gly Lys
580 585 590
His Glu Glu Leu Leu Ala Lys Asn Gly Tyr Tyr Lys Arg Leu Asn Asp
595 600 605
Met Gln Ser Leu
610

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<210> 6954

<211> 135

<212> PRT

<213> B.fragilis

<400> 6954

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Ile Leu Arg Asp Phe Arg Arg Leu Asn Arg Phe Met Asn Leu Phe His
1 5 10 15
Ser Arg Ile Ser Thr Lys Ser Ile Gln Ser Tyr Leu Asn Phe Arg Asn
20 25 30
Tyr Leu Gly Phe Cys Gly Asp Ser Ile Tyr Val Gln Met Ile Ala Phe
35 40 45

```


Leu Arg Tyr Leu Gly Tyr Ile Gln Gln Arg Lys Leu Arg Leu Ser Pro
 50 55 60
 Phe Glu Gln His Gly Met Ala Phe Thr Leu Val Val Ala Glu Ser Asp
 65 70 75 80
 Ile Leu Pro Ile Asn Val Pro Val Thr Arg Leu Gln Phe Pro Asp Gln
 85 90 95
 Arg Ala Phe Gly Tyr Phe Pro Val Pro Gln Gln Thr Val Trp Thr Asp
 100 105 110
 Ile Val Gly Glu Arg Gly Lys Glu Gln Thr Ile Phe Pro Glu Leu Pro
 115 120 125
 Glu His Cys Ala Glu Leu Ser
 130 135

<210> 6955
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 6955
 Phe Tyr Lys Leu Ser Gln Leu Asn Glu Ser Met Lys Tyr Thr Leu Glu
 1 5 10 15
 Ile Gln Lys Leu Leu Leu Gln Ala Gln Asn Asp Asn Leu His Pro Arg
 20 25 30
 Glu Lys Ala Asn Leu Leu Arg Glu Ala Ile Arg Ile Ala Asp Glu Asn
 35 40 45
 Glu Asp Val Gln Trp Ala Val Glu Met Arg Leu Asp Leu Ile Tyr Glu
 50 55 60
 Leu Asn Leu Leu Ser Ala Asp Ala Glu Glu Ile Ala Val Phe Ser Lys
 65 70 75 80
 Ile Leu Asp Ser Tyr Glu Asn His Lys Asp Gln Ile Asn Glu Asp Asp
 85 90 95
 Ile Leu Trp Lys Tyr Lys Trp Ile Trp Ser Cys Thr Phe Asp Leu Pro
 100 105 110
 Ser Ile Pro Met Glu Gln Val
 115

<210> 6956
 <211> 474
 <212> PRT
 <213> B.fragilis

<400> 6956
 Arg Val Val Cys His Val Asp Gly Glu Tyr Leu Arg Leu Leu Phe Leu
 1 5 10 15
 Arg Lys Pro Gln Gln Gly Leu Tyr Gly Ile Lys Leu Val His Val Leu
 20 25 30
 Pro Leu Val Lys Glu Tyr Leu Ala Val Gly Val Ile Asp Asp Ala Leu
 35 40 45
 Leu Asp His Gly Arg Gly Asn Asp Val Val His Leu Leu Arg His His
 50 55 60
 Asp Cys Leu Pro Val Ile Leu Ala His Gly Phe Val His Ile Ala Gln
 65 70 75 80
 Val Leu Ser His Val Arg Arg Arg Glu Ser Leu Pro Ser Leu Phe His
 85 90 95
 Tyr Gln Leu Phe Pro Tyr Ala Phe Gln Ser Ala His Leu Val Asp Glu
 100 105 110
 Gly Phe His Asp Asn Asp Gly His Asp Arg Glu Lys Leu Ala Ile Phe
 115 120 125
 Leu Tyr Arg Ile Asn Leu Glu Asp Asp Glu Pro Leu Ala Glu Gln Val

```

130      135      140
Asp Val Leu Arg Gly Val Glu Gln Glu Val Val Ala Ser Ala Pro Val
145      150      155      160
Ile Leu Pro His Gly Gly Glu His Ile Val Asp Val Glu Ile Gly Leu
      165      170      175
Leu His Leu Tyr Leu Thr Phe Arg Gln Phe Ala Ala Val Val Val Ala
      180      185      190
His Ile Leu Ile Glu Gly Val Glu Arg Gly Asp Asp Ala Pro Val Ser
      195      200      205
Pro Asp Thr Leu Asp Val Cys Val His Arg Thr Ala Gln Phe Ala Ala
      210      215      220
Leu Arg Phe Arg Asn Phe Val Val Leu Arg Leu Pro Glu Cys Gln Gln
225      230      235      240
Gln Arg Leu Asp Ala Val Leu Phe Leu His Val Glu His Val Ile Ile
      245      250      255
Gly Val Lys Arg Ile Glu Arg Asn Arg Phe Leu Leu Arg Val Gly Glu
      260      265      270
Val His Ala Val Arg Pro Val Cys Leu Ala Pro Asp His Leu Ala Gln
      275      280      285
Ala Leu Ile Gly Val Ser Arg Ile His Gln Tyr His Val Arg Thr Leu
      290      295      300
Leu Val Val Leu Pro His Glu Val Val His Lys Glu Gly Phe Ala Ala
305      310      315      320
Ala Arg Arg Thr Gln His Glu Leu Val Ala Val Gly Arg Asp Ala Pro
      325      330      335
Leu His Arg Gln Val Ala Asp Val Glu Val Gln Arg Phe Ser Arg Lys
      340      345      350
Pro Val His His Leu Asp Thr Glu Gly Arg Glu Arg Thr Ala Val Val
      355      360      365
Gly Phe Leu Arg Glu Lys Ala His Arg Leu Leu Asp Glu Gly Met Glu
      370      375      380
Thr Leu Phe Arg Arg Glu Val Arg Arg Val Ala Gly His Arg Arg Pro
385      390      395      400
Val Glu Arg Arg Ala Val Asp Gly Val Val Ala Arg His Ala Leu His
      405      410      415
Ala Cys Gln Leu Ala Ala Tyr Ile Val Leu Tyr Met Leu Gln Phe Leu
      420      425      430
Arg Val Ile Ala Pro Arg His Asp Val Glu Val Arg Pro Tyr Arg Gly
      435      440      445
Gln Pro Val Gly Met Gly Phe Val Gln Val Leu Val Tyr Pro Phe Ala
      450      455      460
Val Asp Ala Val Ala Pro Ala Val Ser Gly
465      470

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<210> 6957

<211> 117

<212> PRT

<213> B.fragilis

<400> 6957

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Arg Met Glu Leu Leu Thr Arg Asn Asn Phe Glu Ser Trp Met Gln Lys
1      5      10      15
Leu Met Glu Arg Leu Asp Arg Gln Asp Glu Leu Leu Leu Ser Leu Gln
      20      25      30
Pro Ser Gly Lys Ala Pro Asn Pro Ile Glu Arg Ile Arg Met Phe Asp
      35      40      45
Asn Gln Asp Leu Cys Met Leu Leu Gln Ile Ser Lys Arg Thr Leu Gln
      50      55      60
Arg Tyr Arg Ser Ile Gly Ala Leu Pro Tyr Lys Thr Leu Gly Lys Lys

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65					70					75				80
Thr	Tyr	Tyr	Ser	Glu	Glu	Asp	Val	Leu	Thr	Phe	Leu	Ser	Gly	His
				85					90					95
Lys	Asp	Phe	Lys	Lys	Glu	Asp	Ile	Ala	Phe	Tyr	Lys	Ala	Arg	Ile
			100					105					110	
Asn	Phe	Phe	Gln	Lys										
			115											

<210> 6958

<211> 409

<212> PRT

<213> B.fragilis

<400> 6958

Asp	Trp	Ser	Cys	Lys	Asn	Arg	His	Phe	Ile	Val	Cys	Phe	Leu	Tyr	Lys
1				5					10					15	
Ile	Arg	Gln	Leu	Lys	Lys	Tyr	Asp	Tyr	Leu	Cys	Thr	Ile	Ile	Tyr	Gln
		20						25					30		
Gly	Met	Glu	Thr	Val	Asn	Arg	Ile	Leu	Gln	Glu	Lys	Ile	Thr	Ala	Arg
	35						40					45			
Ile	Ala	Pro	Asn	Lys	Ala	Val	Leu	Ile	Phe	Gly	Ala	Arg	Arg	Val	Gly
	50					55				60					
Lys	Thr	Val	Met	Met	Arg	Lys	Ile	Val	Asp	Asn	Tyr	Ser	Gly	Arg	Thr
65					70				75					80	
Met	Met	Leu	Asn	Gly	Glu	Asp	Tyr	Asp	Thr	Leu	Ala	Leu	Leu	Glu	Asn
			85					90					95		
Arg	Ser	Ile	Ala	Asn	Tyr	Arg	His	Leu	Leu	Asp	Gly	Ile	Asp	Leu	Leu
			100					105					110		
Ala	Ile	Asp	Glu	Ala	Gln	Asn	Ile	Pro	Gln	Ile	Gly	Ser	Ile	Leu	Lys
		115					120					125			
Leu	Ile	Val	Asp	Glu	Ile	Pro	Gly	Ile	Ser	Val	Leu	Ala	Ser	Gly	Ser
	130					135					140				
Ser	Ser	Phe	Asp	Leu	Leu	Asn	Lys	Thr	Gly	Glu	Pro	Leu	Val	Gly	Arg
145					150				155					160	
Ser	Thr	Gln	Phe	Leu	Leu	Thr	Pro	Phe	Ser	Gln	Arg	Glu	Ile	Ala	Gln
			165					170					175		
Ile	Glu	Thr	Pro	Phe	Glu	Thr	Arg	Gln	Asn	Leu	Glu	Ala	Arg	Leu	Ile
		180					185						190		
Tyr	Gly	Ser	Tyr	Pro	Glu	Val	Val	Met	Met	Glu	Asn	Tyr	Glu	Arg	Lys
	195					200					205				
Thr	Asp	Tyr	Leu	Arg	Asp	Ile	Val	Gly	Ala	Tyr	Leu	Leu	Lys	Asp	Ile
	210					215					220				
Leu	Ala	Ile	Asp	Gly	Leu	Lys	Asn	Ser	Ser	Lys	Met	Arg	Asp	Leu	Leu
225					230					235				240	
Arg	Leu	Ile	Ala	Phe	Gln	Leu	Gly	Ser	Glu	Val	Ser	Tyr	Asp	Glu	Leu
			245						250					255	
Gly	Lys	Gln	Leu	Gly	Met	Ser	Lys	Thr	Thr	Val	Glu	Lys	Tyr	Leu	Asp
		260					265						270		
Leu	Leu	Glu	Lys	Val	Phe	Val	Ile	Tyr	Arg	Leu	Gly	Ala	Tyr	Ser	Arg
	275						280					285			
Asn	Leu	Arg	Lys	Glu	Val	Thr	Lys	Ala	Gly	Lys	Trp	Tyr	Phe	Tyr	Asp
	290					295				300					
Asn	Gly	Ile	Arg	Asn	Ala	Ile	Ile	Gly	Ala	Phe	Ser	Pro	Leu	Ala	Ile
305				310					315					320	
Arg	Gln	Asp	Val	Gly	Ala	Leu	Trp	Glu	Asn	Tyr	Ile	Ile	Gly	Glu	Arg
			325					330						335	
Arg	Lys	Ala	Asn	Phe	Asn	Glu	Gly	Leu	His	Lys	Glu	Phe	Tyr	Phe	Trp
		340					345					350			
Arg	Thr	Tyr	Asp	Lys	Gln	Glu	Ile	Asp	Leu	Ile	Glu	Glu	Cys	Ala	Asp

355 360 365
 Ser Leu Thr Ala Leu Glu Phe Lys Trp Gly Asn Lys Met Pro Asn Ala
 370 375 380
 Pro Lys Val Phe Gln Glu Ala Tyr Pro His Ala Glu Phe His Val Val
 385 390 395 400
 Asn Arg Glu Asn Tyr Leu Glu Phe Val
 405

<210> 6959
 <211> 296
 <212> PRT
 <213> B.fragilis

<400> 6959
 Leu Thr His Cys Met Glu Arg Thr Glu Ile Asp Ala Met Arg Gln Ile
 1 5 10 15
 Pro Leu Ala Asp Phe Leu Ala Arg Leu Gly His Glu Pro Val Arg Arg
 20 25 30
 Ser Gly Asn Glu Leu Trp Tyr Arg Ala Pro Tyr Arg Asn Glu Arg Thr
 35 40 45
 Pro Ser Phe Arg Val Asn Val Ala Lys Gln Leu Trp Tyr Asp Phe Gly
 50 55 60
 Thr Gly Lys Gly Gly Asp Ile Phe Thr Leu Ala Gly Glu Phe Ile Gly
 65 70 75 80
 Ser Asn Asp Phe Met Glu Gln Val Lys Phe Ile Ala Glu Thr Ala Asn
 85 90 95
 Met Pro Met Pro Val Pro Glu Val Ser Lys Pro Thr Phe Leu Pro Lys
 100 105 110
 Pro Ser Glu Pro Ala Phe Glu Gly Val Glu Ala Val Pro Leu Leu Arg
 115 120 125
 Ser Pro Leu Thr Asp Tyr Leu Ala Glu Arg Gly Ile Ser Tyr Asp Ile
 130 135 140
 Ala Ser Arg Tyr Cys Cys Arg Leu Asn Tyr Gly Val Arg Gly Lys Arg
 145 150 155 160
 Tyr Phe Ala Val Gly Phe Pro Asn Val Thr Gly Gly Tyr Glu Ile Arg
 165 170 175
 Ser Arg Phe Phe Lys Gly Cys Val Pro Pro Lys Asp Val Ser Leu Val
 180 185 190
 Lys Ala Glu Gly Ser Pro Ala Asp Val Cys Ser Val Phe Glu Gly Phe
 195 200 205
 Met Asp Phe Leu Ser Ala Ala Thr Leu Gly Leu Glu Lys Gly Asp Cys
 210 215 220
 Leu Val Leu Asn Ser Val Ala Asn Val Glu Lys Ala Met Lys His Leu
 225 230 235 240
 Asp Gly Tyr Gly Cys Ile Asp Cys Tyr Leu Asp His Asp Glu Ala Gly
 245 250 255
 Arg Arg Thr Leu Lys Thr Leu Lys Gly His Tyr Gly Glu Arg Ile Tyr
 260 265 270
 Asp Arg Ser Ala Leu Tyr Asp Gly Cys Lys Asp Leu Asn Glu Tyr Leu
 275 280 285
 Gln Leu Thr Thr Gln Lys Glu Gln
 290 295

<210> 6960
 <211> 177
 <212> PRT
 <213> B.fragilis

<400> 6960

Arg Cys Pro Arg Glu His Ile Ser Phe Pro Ala Glu Arg Leu Tyr Val
 1 5 10 15
 Ala Pro Ser Val Arg Val Thr Glu Pro Phe Pro Ile Lys Ile Leu Arg
 20 25 30
 Glu Thr Arg Ser Glu Leu Leu Arg Pro Leu Leu Phe Ile Ala Glu Phe
 35 40 45
 Cys Arg Arg Asn Gln Lys Lys Gly Leu Asn Met Lys Val Ile Thr Met
 50 55 60
 Glu Ser Ser Ala Phe Thr Val Leu Thr Glu Gln Ile Ala Glu Ile Ala
 65 70 75 80
 Ala His Val Arg Ala Val Ser Gly Glu Arg Lys Glu Lys Phe Ala Asp
 85 90 95
 Arg Leu Leu Asn Thr Arg Glu Ala Ala His Leu Leu Asn Val Ser Thr
 100 105 110
 Arg Thr Leu Gln Arg Met Arg Ser Glu His Arg Ile Gly Tyr Val Val
 115 120 125
 Leu Arg Gly Lys Cys Arg Tyr Arg Gln Ser Glu Ile Asp Arg Leu Leu
 130 135 140
 Ala Asp Cys Thr Ile Val Glu Asp Ala Ala Thr Pro Thr Glu Leu Lys
 145 150 155 160
 Arg Asn His Thr Leu Arg Thr Gly Gly Ser Lys Pro Lys Gly Arg Arg
 165 170 175
 Thr

<210> 6961

<211> 266

<212> PRT

<213> B.fragilis

<400> 6961

Arg Cys His Arg Pro Cys Pro Phe Arg Ser Arg Thr Lys Ala Val Leu
 1 5 10 15
 Pro Arg Ser His Gly Lys Arg Ala Cys Ala His Cys Gly Met Ala His
 20 25 30
 Asp Thr Thr Thr Arg Cys Arg Phe Phe Gly Gln Ala His Val Leu Thr
 35 40 45
 Val Arg Gly Ser Pro Gln Gly Val Ser Ala Ser Trp Arg Arg Phe Pro
 50 55 60
 Ser Val Pro Cys Ser Ala Leu Val Asn Asp Lys Leu Asp Ala His Ala
 65 70 75 80
 Pro Leu Arg Met Lys Leu Pro Arg Val Ala Thr Pro Gln Ala Thr Leu
 85 90 95
 Pro Glu Ile Gly Lys Gln Gly Asp Thr Val Ser His Val Lys Leu His
 100 105 110
 Ile Glu Arg Gln Arg Thr Ala Val Asp Glu Gly Ile Pro Val Met Glu
 115 120 125
 His Gly Ala Val Met Gln Tyr Leu Phe Ala Pro Val His Arg Phe Ile
 130 135 140
 Ser Gly Lys Ser Arg Ser Thr Cys Ile Asp Glu Tyr Asp Phe Thr Gly
 145 150 155 160
 Ile Gly Glu Tyr Leu Glu Val Val Ser Ala Leu Arg Arg Glu Leu Arg
 165 170 175
 His Gly Tyr Leu Pro Val Leu Val Arg Val Val Leu Gln Gln Val Phe
 180 185 190
 Ala Ala Lys His Pro Phe Val Pro Leu Phe Arg Val Gly Gly Lys Ser
 195 200 205
 Arg Pro Glu Thr Val Pro Ala Val Val Ala Ala Gly Ile Glu Ala Val
 210 215 220

<400> 6963																
Phe	Arg	Arg	Arg	Leu	Phe	Leu	Phe	Pro	Phe	Leu	Arg	Arg	Arg	Glu	Phe	
1				5					10					15		
His	His	Phe	Ala	Val	Ala	Thr	Val	Ser	Gly	Asn	Met	Glu	Leu	Pro	Glu	
			20					25					30			
Arg	Phe	His	Arg	Glu	Ala	Ala	Val	Leu	Pro	Ile	Ala	Tyr	Ala	His	His	
		35					40					45				
Arg	Gln	Arg	Gly	Arg	Leu	His	Pro	Ser	Asp	Gly	Ile	Cys	Ala	Val	Ser	
	50					55					60					
Gly	Ser	Asp	Gly	Glu	Cys	Leu	Arg	Ala	Val	Asp	Ala	His	Lys	Pro	Val	
65					70					75					80	
Gly	Phe	Ala	Pro	Cys	Phe	Gly	Ser	Lys	Ile	Glu	Val	Val	Ile	Leu	Ala	
				85					90					95		
Ser	Arg	Phe	Lys	Val	Ala	Gln	Ser	Leu	Ala	Asp	Ser	Leu	Val	Gly	Glu	
			100					105					110			
Arg	Ala	Tyr	Pro	Gln	Ala	Tyr	Glu	Arg	Arg	Ser	Thr	Ser	Asp	Ile	Met	
		115					120					125				
Val	Glu	Val	Ser	Glu	Asp	Lys	Leu	Thr	Phe	Ala	Ser	Cys	Ile	Gly	Arg	
	130					135					140					
His	Asp	Asp	Leu	Leu	Ala	Phe	Leu	Glu	Lys	Thr	Gly	Asp	Asp	Phe	Tyr	
145					150					155					160	
Leu	Arg	His	His	Ala	Ala	Val	Gly	Phe	Val	Thr	Leu	Leu	Arg	Phe	Phe	
				165					170					175		
Leu	Thr	Gly	Asn	Glu	Arg	Glu	Gly	Phe	Gly	Asp	Asp	Gly	Gln	Val	Val	
			180					185					190			
Thr	Asp	Glu	Ala	Ala	Tyr	Ala	Val	Ala	Val	Gly	His	Ser	Lys	Leu	Asp	
		195					200					205				
Lys	Val	Ser	Glu	Cys	Pro	Cys	His	Gly	Thr	Val	Ala	Ser	Leu	Glu	Ile	
	210					215					220					
Ser	Phe	Leu	Ser	Leu	Cys	Arg	Ala	His	Asp	Ala	Gly	Asp	Leu	Thr	Cys	

[illegible]

225		230		235		240
His Gly Trp Leu Phe Cys Asn Asp Cys Leu His Ala Asp Tyr Phe Phe						
	245			250		255
Met Asn Cys Tyr Phe Gly Phe Ser Gly Gly His Gly Met Leu His Leu						
	260			265		270
His Ala Leu Asp Asp Phe Leu Leu Arg Leu Leu Leu Gln Leu Leu Leu						
	275			280		285
Phe Val Val Phe Arg Ser Gly Leu Pro Phe Leu Gln Arg Leu Phe Gln						
	290			295		300
Val Leu Gly Arg Leu Val Gly Leu Ser Phe Ala Val His Arg His Leu						
305		310			315	320
Cys Ala Ala Leu Val Gly Arg Gly Asp Leu Leu Arg Val Val Gly Val						
	325			330		335
Gly Val Val Ala Val Arg Thr Ser Leu Leu Arg Val Glu Leu Asp Val						
	340			345		350
His Arg Gly Val Glu Thr Leu Leu Val Gly His Val Leu Gln Phe Asp						
	355			360		365
Ser Phe Ala Cys Arg Val Ile Gly Phe Leu Leu Val Gly Glu Val His						
	370			375		380
Ala Ala Pro Phe Thr Asp Gly Ala Asp Ala Ala Val Gly Val Arg Pro						
385		390			395	400
Arg Val Ala Ala Leu Leu Phe Leu Trp Gly Cys Gly Ile Phe His Ala						
	405			410		415
Leu Ser Leu Ser Leu Arg Gly Ile Val Leu Gly Phe Leu Arg Leu Gly						
	420			425		430
Gly Thr Arg Arg Pro Ala Gly Ser Arg Tyr Glu Leu His Ala Ser Leu						
	435			440		445
Leu Asp Val His Leu Lys Cys Gly Asp Glu Leu Pro Ala Val Val Ala						
	450			455		460
Phe Asp Glu Leu Val Ala His Gly Gln Pro Gly Thr Gln His Ile Leu						
465		470			475	480
Leu Leu Leu Gly Asp Phe Arg Leu Ser Asp Ala Ile Arg Tyr Ala His						
	485			490		495
Leu Val Cys Arg Asn Val Arg Asp Phe Ile Arg Leu Ala Val Tyr Ala						
	500			505		510
Asp Glu Arg Gly Asp Asp Phe Thr Arg Phe Pro Val His Asp Val His						
	515			520		525
Asp Pro Ala Glu Val Ala Arg Phe Ala Gln Val Leu Thr Val Phe Val						
	530			535		540
Arg Lys Leu Val Phe Leu Val Phe Ile Glu Phe Leu Leu Leu Ala Asp						
545		550			555	560
Glu Val Arg His Glu Ala Asp Ile Ala Phe Thr Val Leu Leu Glu Gly						
	565			570		575
Lys Ala Gly Ile Gln Phe Lys Ser Leu Ala Ala Glu Leu Gly Arg His						
	580			585		590
Phe His Gln Ile Gly Leu Ala Val Val Glu His Leu Leu Lys Val Thr						
	595			600		605
Gly Leu Phe Lys Val Val Met Phe His Ala Pro Phe Leu Phe Gln Leu						
	610			615		620
Leu Pro Val Asp Phe Ala Leu Val Asp Gly Leu Val Ala Leu Ser Ala						
625		630			635	640
Leu Arg Leu Leu Arg Ala Phe Leu Leu Leu Phe His Phe Phe Leu Phe						
	645			650		655
Leu Val Phe Phe Gly Leu Leu Phe Leu Leu Leu Phe Arg Leu Leu Arg						
	660			665		670
Leu Ser Gly Gly Leu Phe Phe Leu His Leu Leu Phe Val Ala Gly Ser						
	675			680		685
Val His Leu Val Gly Arg Lys Gln Phe Leu Val Gly Phe Gly Val Phe						
	690			695		700

Gln Gln Val Phe His His Leu His Gln Phe Val Gly Leu Val Cys Cys
 705 710 715 720
 Asp Thr Val Glu Thr Glu Ala Ala Gly Phe Leu Ala Leu Pro Glu Glu
 725 730 735
 Val Phe Glu Glu Val Val Gln His Ile Ala Val Ala Val Glu Leu Gln
 740 745 750
 Glu Thr Leu Arg Val Leu Arg Phe Arg Gly Gly Thr Leu Gly Gly Thr
 755 760 765
 Val Gly Ile Gln Pro Gly Tyr His Ala Asp Phe Ala Arg Leu Leu Val
 770 775 780
 Thr Asp Tyr Gln His Val Leu Phe Ala Phe Phe Leu Cys His Leu Lys
 785 790 795 800
 Asn Val Leu Met Gly Tyr Phe
 805

<210> 6964
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 6964
 Ser Lys Ile Ser Phe Leu Thr Ser Arg Met Asp Ser Ser Gly Glu Ser
 1 5 10 15
 Arg Asp Thr Ser Phe Phe Val Asn Tyr Lys Arg Gly Leu Thr Leu Pro
 20 25 30
 Lys Thr Glu Leu Asp Ser Met Ser Lys Arg Lys Leu Thr Thr Lys Phe
 35 40 45
 Glu Glu Glu Pro Gln Lys Ile Ile Ser Ile Phe His Leu Thr Pro Ser
 50 55 60
 Val Phe Gln Ala Ile Leu Arg Ile Pro Tyr
 65 70

<210> 6965
 <211> 653
 <212> PRT
 <213> B.fragilis

<400> 6965
 Ala Arg Asn Arg Leu Asp Arg Arg Val Cys Arg Gln Phe Asp Gly Phe
 1 5 10 15
 Gly Val Gln Met Gly Lys Gln Asp Ala Gln Cys Ser Glu Ser Val Ser
 20 25 30
 Arg Ser Ile Ser Pro Cys Arg Val Pro Cys Cys Lys Gln Gly Glu Leu
 35 40 45
 Phe Gly Val Cys Ile Lys Thr Lys Lys Tyr Arg Asn Met Tyr Leu Ser
 50 55 60
 Ser Leu His Ile Arg Gln Phe Arg Val Phe Asp Asp Ile Thr Leu Tyr
 65 70 75 80
 Phe Lys Asn Gly Ile Asn Ile Leu Ile Gly Glu Asn Asn Ser Gly Lys
 85 90 95
 Thr Ala Ile Ile Asp Ala Leu Arg Ile Cys Leu Gly Cys Gly Lys Pro
 100 105 110
 Asp Asn Tyr Ile Tyr Ile Gln Glu Ser Asp Leu His Val Asn Ser Thr
 115 120 125
 Val Pro Thr Glu Asn Asn Thr Thr Ile Gln Phe Asp Leu Thr Phe Glu
 130 135 140
 Phe Gly Asp Ala Leu Ile Glu Arg Glu Cys Phe Tyr Asp Phe Ile Ser
 145 150 155 160
 Gln Asp Lys Glu Asp Pro Ala Lys Gln Thr Ile Gln Leu His Leu Lys

															165																170																175	
Phe	Ile	Gln	Glu	Asn	Asn	Gly	Lys	Lys	Lys	Tyr	Phe	Lys	Arg	Met	Ile																																	
															180																185																190	
Trp	Gly	Gly	Asp	Asn	Glu	Gly	Gln	Gln	Val	Pro	Tyr	Glu	Ser	Leu	Gln																																	
															195																200																205	
Glu	Ile	Phe	Tyr	Thr	Tyr	Leu	Ser	Pro	Leu	Arg	Asp	Ala	Val	Ser	Cys																																	
															210																215																220	
Leu	Arg	Pro	Tyr	Ser	Tyr	Asp	Asn	Lys	Thr	Ser	Gln	Leu	Phe	Asn	Gln																																	
225																230																235																240
Leu	Thr	Lys	Tyr	Asn	Lys	Gly	Glu	Glu	Glu	Ile	Glu	Leu	Asn	Glu	Glu																																	
															245																250																255	
Arg	Lys	Asp	Leu	Leu	Ala	Lys	Asn	Leu	Tyr	His	Val	Phe	Glu	Asp	Asp																																	
															260																265																270	
Ala	Ser	Asp	Trp	Lys	His	Ile	Leu	Thr	Thr	Gly	Lys	Ser	Lys	Val	Asn																																	
															275																280																285	
Ala	His	Leu	Glu	Gly	Thr	Gly	Ile	Thr	Arg	Lys	His	Pro	Asn	Ile	Glu																																	
															290																295																300	
Met	Arg	Tyr	Val	Gly	Arg	Lys	Phe	Ser	Asp	Val	Val	Arg	Gly	Val	Glu																																	
305																310																315																320
Leu	Lys	Cys	Pro	Val	Tyr	Lys	Thr	Ile	Glu	Asp	Gly	Gln	Glu	Gln	Lys																																	
															325																330																335	
Tyr	Phe	Glu	Leu	Tyr	Gln	Asn	Gly	Leu	Gly	Glu	Asn	Asn	Leu	Ile	Phe																																	
															340																345																350	
Thr	Ser	Val	Val	Leu	Gly	Asp	Leu	Ile	Asn	Arg	Cys	Glu	Asp	Asn	Ala																																	
															355																360																365	
Leu	Glu	Ile	Tyr	Asn	Ala	Leu	Leu	Val	Glu	Glu	Pro	Glu	Ala	His	Leu																																	
															370																375																380	
His	Pro	Gln	Tyr	Gln	Asn	Thr	Phe	Phe	Glu	Tyr	Leu	Asn	Glu	Leu	Gln																																	
385																390																395																400
Ser	Lys	Gly	Leu	Gln	Val	Phe	Val	Thr	Ser	His	Ser	Pro	Thr	Ile	Thr																																	
															405																410																415	
Ala	Lys	Ser	Asp	Val	Asn	Asn	Ile	Ser	Val	Leu	Gln	Arg	Lys	Gln	Asn																																	
															420																425																430	
Ile	Val	Gln	Ser	Phe	Ser	Phe	Gly	Lys	Leu	Thr	Glu	Ser	Asp	Tyr	Pro																																	
															435																440																445	
Ala	Glu	Ser	Lys	Arg	His	Leu	Arg	Lys	Phe	Leu	Asp	Thr	Thr	Lys	Ala																																	
															450																455																460	
Gln	Leu	Phe	Phe	Ala	Asn	Gly	Val	Leu	Leu	Val	Glu	Gly	Val	Ala	Glu																																	
465																470																475																480
Ala	Ile	Ile	Ile	Pro	Ile	Leu	Ala	Lys	Lys	Phe	Leu	Ser	Glu	Lys	Ile																																	
															485																490																495	
Asp	Leu	Cys	Lys	Ser	Gly	Ile	Glu	Leu	Val	Asn	Ile	Gly	Gly	Val	Ala																																	
															500																505																510	
Phe	Asn	His	Phe	Gly	Leu	Leu	Phe	Asn	Asp	Asp	Glu	Ser	Lys	Arg																																		
															515																520																525	
Leu	Leu	Ser	Lys	Cys	Ala	Ile	Ile	Thr	Asp	Ser	Asp	Pro	Glu	Glu	Asp																																	
															530																535																540	
Lys	Asp	Lys	Ser	Asp	Arg	Ala	Gln	Lys	Ala	Lys	Asp	Leu	Glu	Gly	Gln																																	
545																550																555																560
Asn	Leu	Lys	Val	Cys	Leu	Ala	Pro	His																																								

Tyr Ile Lys Asp Ala Ile Leu Phe Val Ala Pro Ser Glu
645 650

<210> 6966
<211> 180
<212> PRT
<213> B.fragilis

<400> 6966
Leu Phe Thr Ser Ser Ser Val Asn Leu Ile Glu Met Gln Glu Ile Ser
1 5 10 15
Phe Arg Asp Asp Ile Leu Pro Leu Lys Asp Lys Leu Phe Arg Leu Ala
20 25 30
Leu Arg Ile Thr Phe Asp Arg Ala Glu Ala Glu Asp Val Val Gln Asp
35 40 45
Thr Met Ile Arg Val Trp Asn Lys Arg Glu Glu Trp Thr Gln Phe Gly
50 55 60
Ser Ile Glu Ala Tyr Cys Leu Thr Val Ala Lys Asn Leu Ala Ile Asp
65 70 75 80
Arg Ser Gln Lys Lys Glu Ala Gln Asn Val Glu Leu Thr Pro Glu Met
85 90 95
Glu Glu Glu Ser Glu Ile Ser Gly Pro Tyr Asp Gln Leu Val Asn Asn
100 105 110
Glu Arg Met Ser Ile Ile His Arg Leu Ile Asn Glu Leu Pro Glu Lys
115 120 125
Gln Arg Leu Ile Met Gln Leu Arg Asp Ile Glu Gly Glu Ser Tyr Lys
130 135 140
Glu Ile Ala Lys Ile Leu Asn Leu Thr Glu Glu Gln Val Lys Val Asn
145 150 155 160
Leu Phe Arg Ala Arg Gln Lys Val Lys Gln Arg Tyr Leu Glu Ile Asp
165 170 175
Glu Tyr Gly Leu
180

<210> 6967
<211> 99
<212> PRT
<213> B.fragilis

<400> 6967
Val Leu Val Arg Asn Val Phe Leu Ile Asp Arg Lys Asn Arg Leu Tyr
1 5 10 15
Leu Leu Cys Val Thr Lys Thr Thr Glu Tyr Met Lys Lys Phe Leu Lys
20 25 30
Ala Ile Gly Cys Phe Ala Ile Phe Val Leu Ala Val Phe Ser Tyr Phe
35 40 45
Arg Glu Gln Pro Tyr Lys Leu Asp Ser Leu Ser Leu Gln Asn Val Glu
50 55 60
Ala Leu Ala Glu Gly Glu Glu Tyr Thr His Ile Ser Cys Ile Gly Val
65 70 75 80
Gly Ser Leu Asp Cys Pro Val Asn His Ser Gly Val Lys Tyr Ile Phe
85 90 95
Lys Gly Tyr

<210> 6968
<211> 198
<212> PRT
<213> B.fragilis

<400> 6968

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Arg Thr Ser Ser Ala Leu Thr Met Arg Lys Tyr Ile Ala Ile Ile Ile
1          5          10          15
Ala Ser Leu Ala Leu Cys Thr Gly Gln Ala His Ala Gln Arg Cys Leu
          20          25          30
Pro Lys Met Gln Gly Ile Glu Val Arg Ala Asn Met Ala Asp Gly Phe
          35          40          45
Asn Pro Gly Gly Asn Asp Gly Tyr Ser Phe Gly Ala Ala Leu Ser
          50          55          60
Thr Tyr Thr Lys Lys Gly Asn Lys Trp Met Phe Gly Gly Glu Tyr Leu
65          70          75          80
Leu Lys Asn Asn Pro Tyr Lys Asp Gly Lys Ile Pro Val Ala Gln Phe
          85          90          95
Thr Ala Glu Gly Gly Tyr Tyr Phe Lys Ile Leu Ser Asp Ala Arg Lys
          100         105         110
Ile Val Phe Val Tyr Ala Gly Ala Ser Ala Leu Ala Gly Tyr Glu Ser
          115         120         125
Val Asn Trp Gly Glu Lys Val Leu His Asp Gly Ser Met Leu His Asp
          130         135         140
Arg Asp Ala Phe Ile Tyr Gly Gly Ala Leu Thr Leu Asp Val Glu Phe
145         150         155         160
Tyr Val Ala Asp Arg Ile Ala Leu Leu Ala Asn Leu Arg Glu Arg Cys
          165         170         175
Leu Trp Gly Gly Asp Thr Arg Lys Phe His Thr Gln Trp Gly Val Gly
          180         185         190
Ile Lys Phe Ile Ile Asn
          195

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<210> 6969

<211> 272

<212> PRT

<213> B.fragilis

<400> 6969

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Glu Ile Lys Ser Arg Lys Asp Trp Leu Tyr Gly Lys Tyr Cys Ile Asp
1          5          10          15
Leu Pro Gly Asn Ala His Tyr Asp Lys Phe Glu Leu Arg Gln Phe Ile
          20          25          30
Phe Ile Met Lys Cys Ile His Ile Thr Pro Val Lys Asp Ser Ile
          35          40          45
Glu Leu Thr Leu Gln Thr Ala Glu Ala Ile Leu Lys Ser Asp Phe Thr
          50          55          60
Val Pro Phe His Tyr Thr Ile Tyr Asn Asp Phe Ser Thr Asp Glu Asn
65          70          75          80
Thr Lys Gln Leu Lys Glu Ala Ser Leu Lys Met Gly Phe Glu Leu Val
          85          90          95
Asn Leu Ser Glu Ile Thr Ser His Pro Ser Pro Asn Tyr Leu Leu Val
          100         105         110
Leu Gln Met Ala Gln Glu Lys Ala Ile Ala Ala Glu Ala Gly Leu Leu
          115         120         125
Ile Val Glu Ser Asp Val Ile Val Lys Lys His Thr Leu Gln Ser Leu
          130         135         140
Phe Asp Gly Ala Gln Ala Arg Lys Asp Cys Gly Ile Ala Ala Ala Val
145         150         155         160
Thr Val Asp Glu His Glu Ala Ile Asn Tyr Pro Tyr Leu Tyr Ala Lys
          165         170         175
Gly Lys Glu Asn Gln Val Phe Pro Glu Lys Lys His Leu Ser Phe Cys
          180         185         190

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Cys Ser Leu Leu Thr Thr Asp Phe Leu Arg Ala Phe Asp Phe His Ser
 195 200 205
 Leu Asn Pro Glu Lys Asn Trp Phe Asp Val Thr Ile Ser His Gln Ala
 210 215 220
 Leu Glu Lys Gly Phe Val Asn Tyr Leu Phe Thr Thr Leu Thr Val Trp
 225 230 235 240
 His Arg Pro His Ser Ser Arg Pro Trp Lys Gln Leu Lys Tyr Thr Asn
 245 250 255
 Pro Leu Lys Tyr Tyr Trp Leu Lys Phe Thr Lys Gly Leu Asp Lys Ile
 260 265 270

<210> 6970

<211> 116

<212> PRT

<213> B.fragilis

<400> 6970

Ile Arg Lys Arg Ile Arg Lys Thr Gly Ser Pro His His Asp Gly Gly
 1 5 10 15
 Ser Met Leu Ala Gln Val Gln Ala Ser Val Glu Ile Leu Ser Pro Val
 20 25 30
 Pro Val Ser Gly Lys Cys Gly Glu Lys Asp Tyr Asp Gly Leu Phe Ile
 35 40 45
 Arg Glu Pro Glu Val Lys Ala Arg Glu Gly Lys Met Ala Tyr Val Arg
 50 55 60
 Pro Glu Tyr His Asp Arg Ile Met Arg Ile Thr Arg Val Ile Gly His
 65 70 75 80
 Asp Arg Leu Ser Leu Ser Ala Tyr Ile Asp His Val Leu Thr His His
 85 90 95
 Phe Asn Gln Cys Glu Glu Ala Ile Lys Ser Leu Tyr Ala Arg Asn Tyr
 100 105 110
 Asp Ala Val Phe
 115

<210> 6971

<211> 627

<212> PRT

<213> B.fragilis

<400> 6971

Ala Gly Glu Ser Pro Val His Gly Glu Gly Lys Gln Leu Ile Ile Leu
 1 5 10 15
 Met Gln Ile Thr Glu Asn Val Arg Asp Ile Met Arg Ser Pro Glu Tyr
 20 25 30
 Val Leu Asn Ser Leu Thr Glu His Ser Glu Asn Leu Asn Tyr Lys Phe
 35 40 45
 Glu Arg Leu Tyr Arg Ile Phe Phe Asn Glu Glu Met Tyr Tyr Val Ala
 50 55 60
 Tyr Gln Arg Ile Tyr Ala Lys Pro Gly Asn Met Thr Ala Gly Ala Asp
 65 70 75 80
 Gly Lys Thr Ile Asp Gln Met Ser Leu Asn Arg Ile Glu Gln Leu Ile
 85 90 95
 Thr Ser Leu Lys Asp Glu Ser Tyr Gln Pro Gln Pro Ser Lys Arg Met
 100 105 110
 Tyr Ile Pro Lys Lys Asn Gly Lys Met Arg Pro Leu Gly Val Pro Ala
 115 120 125
 Phe Asn Asp Lys Leu Leu Gln Glu Val Val Arg Met Ile Leu Glu Ala
 130 135 140
 Ile Tyr Glu Arg Gln Phe Glu Lys Thr Ser His Gly Phe Arg Pro Leu

145					150					155					160
Arg	Ser	Cys	His	Thr	Ala	Leu	Ser	Asp	Ile	Gln	Lys	Thr	Phe	Ser	Gly
				165					170						175
Val	Lys	Trp	Phe	Val	Glu	Gly	Asp	Ile	Lys	Gly	Phe	Phe	Asp	Asn	Ile
			180					185							190
Asn	His	Glu	Ile	Leu	Ile	Gly	Ile	Leu	Lys	Glu	Arg	Ile	Ala	Asp	Glu
		195					200					205			
Arg	Phe	Ile	Arg	Leu	Ile	Arg	Lys	Phe	Leu	Asn	Ala	Gly	Tyr	Ile	Glu
	210					215					220				
Asp	Trp	Asn	Phe	His	Asn	Ser	Tyr	Ser	Gly	Thr	Pro	Gln	Gly	Gly	Ile
225					230					235					240
Val	Ser	Pro	Ile	Leu	Ala	Asn	Ile	Tyr	Leu	Asp	Lys	Leu	Asp	Lys	Phe
				245					250						255
Met	Lys	Glu	Tyr	Thr	Gly	Lys	Phe	Asp	Lys	Gly	Lys	Glu	Arg	Lys	Arg
			260					265							270
Thr	Lys	Gln	Val	Val	Ser	Leu	Glu	Gly	Lys	Arg	His	Arg	Ile	Leu	Lys
		275						280					285		
Lys	Leu	Lys	Val	Val	Lys	Asp	Lys	Ser	Glu	Arg	Ser	Glu	Leu	Ile	Arg
	290					295					300				
Gln	Tyr	Lys	Ala	Tyr	Gln	Lys	Glu	Gly	Leu	Gln	Tyr	Ser	Asp	Gly	Asp
305					310					315					320
Glu	Met	Asp	Met	Asn	Tyr	Arg	Lys	Leu	Lys	Tyr	Val	Arg	Tyr	Ala	Asp
				325					330						335
Asp	Phe	Leu	Ile	Gly	Ile	Ile	Gly	Ser	Lys	Gln	Asp	Ala	Ile	Ile	Ile
			340					345					350		
Lys	Glu	Asp	Ile	Lys	Asn	Phe	Leu	Tyr	Glu	Lys	Leu	Ala	Leu	Thr	Leu
		355					360					365			
Ser	Asp	Glu	Lys	Thr	Leu	Ile	Thr	His	Ala	Glu	Asn	Ala	Ala	Lys	Phe
	370					375					380				
Leu	Gly	Tyr	Glu	Ile	Phe	Val	Arg	Lys	Ser	Asn	Asp	Thr	Lys	Arg	Ser
385					390					395					400
Lys	Tyr	Gly	Val	Leu	Arg	Arg	Val	Phe	Asn	Lys	Arg	Ile	Gln	Leu	Ala
			405						410						415
Leu	Gly	Lys	Asp	Thr	Phe	Lys	Lys	Lys	Leu	Leu	Glu	Tyr	Arg	Val	Leu
			420					425					430		
Glu	Ile	Lys	Ile	His	Asn	Gly	Lys	Glu	Tyr	Trp	Lys	Ala	Lys	Ser	Arg
	435						440					445			
Pro	Lys	Leu	Ser	Asn	Asn	Asn	Asp	Phe	Glu	Ile	Leu	Asp	Arg	Tyr	Asn
	450					455					460				
Lys	Glu	Ile	Lys	Gly	Ile	Tyr	Asn	Tyr	Tyr	Cys	Leu	Ala	Asn	Asn	Cys
465					470					475					480
Ser	Ser	Leu	Ser	Lys	Leu	Gly	Tyr	Ile	Met	Lys	Tyr	Ser	Met	Tyr	Lys
				485					490						495
Thr	Phe	Ala	Gln	Lys	Tyr	Arg	Thr	Thr	Met	Ser	Gln	Ile	Arg	Lys	Lys
			500					505							510
Tyr	Thr	Lys	Asn	Gly	Leu	Phe	Ser	Val	Arg	Tyr	Tyr	Leu	Lys	Asn	Gly
		515					520						525		
Thr	Ala	Lys	Asp	Leu	Thr	Phe	Tyr	His	Gly	Gly	Phe	Lys	Lys	Lys	Asn
	530					535					540				
Pro	Met	Asn	Ile	Lys	Asp	Leu	Asp	Asn	Leu	Pro	Lys	Phe	Thr	Tyr	His
545					550					555					560
Pro	Thr	Asn	Thr	Ser	Leu	Ile	Asp	Arg	Leu	Lys	Ala	Glu	Lys	Cys	Glu
				565					570						575
Leu	Cys	Gly	Ala	Val	Asp	Lys	Leu	Val	Met	His	His	Val	Arg	Lys	Leu
			580					585							590
Lys	Asn	Leu	Gln	Gly	Lys	Thr	Thr	Cys	Glu	Lys	Gln	Met	Met	Ala	Arg
		595					600					605			
Lys	Arg	Lys	Thr	Ile	Ala	Ile	Cys	Gly	Lys	Cys	Tyr	Lys	Lys	Leu	Ser
	610					615					620				

Asn Asn Glu
625

<210> 6972
<211> 160
<212> PRT
<213> B.fragilis

<400> 6972
Val Leu Gly Arg Asn Gln Pro Tyr His Gln Thr Ser Met Ser Met Gly
1 5 10 15
Ser Arg Lys Val Asn Thr Glu Gly Ile Asp Glu Glu Leu Leu Ile Ala
20 25 30
Ser Ile Gly Arg Arg Lys Gln Asp Gly Thr Leu Tyr Arg Ala Gln Glu
35 40 45
Pro Pro Val Pro Ala Pro Glu Glu Glu Ser Val Pro Glu Thr Glu Pro
50 55 60
Pro Pro Thr Ala Ser Pro Ser Arg Glu Lys Val Gln Lys Asp Thr Ala
65 70 75 80
Arg Arg Lys Arg Gln Glu Asp Asp Tyr Ser Gly Leu Phe Leu Arg Arg
85 90 95
Asn Glu Ile Lys Thr Arg Gln Cys Val Tyr Ile Ser Arg Asp Val His
100 105 110
Ser Lys Ile Leu Lys Ile Val Asn Asp Ile Ala Gly Arg Glu Ile Ser
115 120 125
Val Gly Gly Tyr Val Asp Thr Val Leu Arg Gln His Leu Glu Gln His
130 135 140
Lys Glu Lys Ile Asn Glu Leu Tyr Lys Asn Gln Arg Glu Asp Leu Ile
145 150 155 160

<210> 6973
<211> 439
<212> PRT
<213> B.fragilis

<400> 6973
Lys Phe Leu Gly Cys Phe Pro Phe Gly Glu His Glu Ser Arg Val Val
1 5 10 15
Val Pro Val Lys Gly Asn His Gly Ile Glu Ala Leu Ala Leu Ala
20 25 30
Leu Glu Ala Phe Glu Gln Phe Arg Val Ser Val Gly Glu Gln Val Phe
35 40 45
Asp Leu Val Ile Gly Glu Gly Thr Val Cys Leu Gln Ala Glu His Gly
50 55 60
Gln Pro Ala Leu Arg Val Val Ala Ala Asp Asp Leu Ala Val Lys Leu
65 70 75 80
His Thr Ser Arg Ser Ala Leu Gly Thr Leu Ala Ala Gly Ile Pro Ala
85 90 95
Gly Glu Gln Leu Val Ala Arg Glu Gln Phe Gly Gly Asn Phe Leu Arg
100 105 110
Val Arg Leu Tyr Leu Leu Ala Glu Gly Ile Gly Arg Gln Phe Pro Ala
115 120 125
Leu Asn Ala Cys Gln Leu Leu Phe Pro Phe Ala Arg His Gly Asn Val
130 135 140
Gly Asp Ala His Arg Leu His Asp Arg Val Glu Gly Lys Pro Leu Phe
145 150 155 160
Gly Arg Tyr Lys Arg Leu Leu Ala Ala Phe His Val Ser Pro Phe Glu
165 170 175
Lys Arg Phe Asp Asn Arg Cys Thr Gly Ser Arg Arg Ala Asn Ala Ala

180	185	190
Val Leu Gln Ser Leu Thr Gln Arg Ile Val Leu Asn Leu Leu Ala Cys		
195	200	205
Arg Phe His Ser Gly Gln Gln Gly Gly Phe Gly Met Gln Arg Phe Arg		
210	215	220
Leu Gly Leu Ala Leu Cys Asp Gly Gly Ser Phe Gln Cys Gln Arg Val		
225	230	235
Ala Phe Leu Pro Ala Gly Asp Asp Gly Phe Leu Phe Leu Phe Leu Ala		
245	250	255
Ile Asp Gly Thr Pro Pro Gly Leu Phe Asp Asp Ala Ala Phe Cys His		
260	265	270
Glu Leu Arg Ser Gly Thr Leu Arg Arg Asn Ser Gly Gly Val Phe Asp		
275	280	285
Ala Phe Phe Arg Glu Ser Leu Asn His Ala Ser Gly Asn His Leu Ile		
290	295	300
Asp Gly Ile Ile Phe Phe Gly Glu Glu Gln Arg Phe Leu Ala Arg Asp		
305	310	315
Glu Gln Gly Val Val Val Arg Tyr Leu Ala Thr Val His Ala Ala Ala		
325	330	335
Cys Arg His Gly Phe Arg Ile Asp Phe Ala Phe Pro Phe Gly Gln Ala		
340	345	350
Ala Asp Glu Gly Glu Gln Leu Gly Tyr Phe His Glu His Val Phe Trp		
355	360	365
Asp Val Ala Ala Ser Cys Ser Trp Ile Gly Asp Glu Phe Leu Leu Val		
370	375	380
Glu Leu Leu Cys Asp Phe Lys Arg Leu Phe Cys Arg Glu Ala Val Leu		
385	390	395
Gly Val Gly Phe Leu Leu Glu Arg Gly Gln Val Val Gln Lys Arg Ser		
405	410	415
Val Leu Arg Leu Leu Leu Ala Phe Cys Phe Arg Asp Ser Gly Cys Ala		
420	425	430
Cys Phe Leu Tyr Leu Ile Val		
435		

<210> 6974

<211> 179

<212> PRT

<213> B.fragilis

<400> 6974

Pro Arg Asn Gly Asp Ala Glu Gln Ser Phe Val Ser Thr Phe Leu Thr		
1	5	10
Ile Lys Ser Asn Asp Tyr Gly Asn Thr Asn Asp His Gln Arg Ser Lys		
20	25	30
Tyr Leu His Glu Ser Arg Asp Arg Glu Ile Arg Glu Val Pro Asn Gly		
35	40	45
Tyr Arg Gln Thr Gln Ala Asp Thr Cys Ala Ile Arg Leu Pro Pro His		
50	55	60
Gly Arg Gly Ile Ile Leu Leu Cys Glu Thr His Val Gly Arg Val Pro		
65	70	75
Asn Arg Thr Gly Gln Val Ala Asp Gly Lys Lys Arg Lys Gly Gly Gln		
85	90	95
Ala Met Asn Glu Ser Gly Tyr Gln Thr Leu Ile Val Lys Phe Ser Lys		
100	105	110
Pro Ile Thr Glu Leu Asp Gly Ile Phe Asp Asp Ala Glu Ala Trp Gly		
115	120	125
Val Glu Thr Leu Lys Gly Trp Val Glu Asp Tyr Glu Ser Ser Arg Phe		
130	135	140
Thr Ala Ile Asp Thr His Thr Ala Val Ile Thr Ser Glu Tyr Asn Met		

145 150 155 160
 Glu Cys Val Lys Thr Trp Leu Glu Arg Asn Thr Pro Ile Ala Glu Lys
 165 170 175
 Thr Glu Phe

<210> 6975
 <211> 152
 <212> PRT
 <213> B.fragilis

<400> 6975
 His Pro His Gly Ser His Asn Glu Arg Val Gln Tyr Gly Val Cys Glu
 1 5 10 15
 Asn Met Val Gly Lys Glu His Pro His Ser Arg Glu Asn Arg Ile Leu
 20 25 30
 Asn Ile Arg Ala Val Ser Ala Pro Pro Glu His Ser Thr Gln Arg Arg
 35 40 45
 Met Asn Met Ile Ala Lys Thr Ile Leu Glu Gln Ile Gly Gly Arg Arg
 50 55 60
 Phe Ala Ala Met Thr Gly Ser Lys Asp Phe Ile Asp Met Gly Asn Gly
 65 70 75 80
 Leu Arg Met Ser Leu Ala Arg Asn Lys Thr Ser Ala Asn Arg Leu Asp
 85 90 95
 Ile Ile Tyr Asp Ala Gly Ala Asp Leu Tyr Asn Met Arg Phe Tyr Arg
 100 105 110
 Arg Thr Phe Ser Lys Lys Thr Phe Glu Cys Lys Thr Lys Asp Ile Glu
 115 120 125
 Thr His Glu Arg Ile Tyr Cys Asp Met Leu Glu Glu Met Phe Thr Met
 130 135 140
 Val Thr Gly Leu Tyr Thr Arg Phe
 145 150

<210> 6976
 <211> 430
 <212> PRT
 <213> B.fragilis

<400> 6976
 Phe Arg Leu Met Lys Pro Arg Thr Gln Ile Gln Gln Glu Val Ala His
 1 5 10 15
 Leu Ser Lys Arg Leu Pro Arg Leu Thr Ala Thr Gln Lys Ala Tyr Ala
 20 25 30
 Phe Arg His Cys Phe Lys His Tyr Ala Ile Lys Arg Ala Asp Gly Thr
 35 40 45
 Asn Ile Cys Thr Glu Cys Gly His Ser Trp Lys Ser Asp His Asp Leu
 50 55 60
 Ala Asp Thr Ile Cys Gly Cys Thr Cys Pro His Cys Gly Met Gln Leu
 65 70 75 80
 Glu Ala Leu Arg Thr Arg Lys Ser Val Phe Ser Glu Asn Glu Tyr Phe
 85 90 95
 Ser Ile Val Thr Thr Ser Lys Gln Tyr Gln Val Ile Arg Phe Phe Phe
 100 105 110
 Val Lys Ser Arg Tyr Lys Ala Gly Gln Ala Ala Glu Tyr Ser Ile Tyr
 115 120 125
 Glu Val Val Gln Arg Trp Ile Ser Pro Asp Gly Lys Thr Thr Thr Val
 130 135 140
 Ala Arg Leu Arg Gly Met Ser Met Leu Tyr Tyr Asp Gln Trp Ser Glu
 145 150 155 160

Tyr Ser Asp Met Glu Val Arg Lys Asn Asn Gly Leu His Ala Tyr Asp
 165 170 175
 Ile Thr Pro Met Cys Thr Tyr Pro Arg Gln Arg Phe Ile Pro Glu Leu
 180 185 190
 Lys Arg Asn Gly Phe Lys Gly Asp Tyr His Asn Thr Leu Pro Tyr Asp
 195 200 205
 Leu Phe Thr Ala Ile Leu Ser Asp Ser Arg Thr Glu Thr Leu Leu Lys
 210 215 220
 Ala Gly Gln Tyr Ala Met Leu Arg His Tyr Ile Arg Ser Ser Phe Asp
 225 230 235 240
 Met Gly Arg Tyr Trp Ala Ser Val Lys Ile Cys Ile Arg Asn Gly Tyr
 245 250 255
 Thr Ile Ser Asp Gly Ser Val Trp Cys Asp Thr Ile Asp Leu Leu Arg
 260 265 270
 His Phe Gly Lys Asp Thr Asn Ser Pro Lys Tyr Val Cys Pro Ala Asn
 275 280 285
 Leu Lys Ala Glu His Asp Lys Leu Val Ala Lys Arg Asn Leu Gln Arg
 290 295 300
 Glu Arg Glu Arg Thr Glu Gln Gln Arg Gln Lys Ala Ile Glu Asp Glu
 305 310 315 320
 Lys Asn Tyr Leu Lys Ala Lys Gly Ile Phe Phe Gly Leu Val Phe Ser
 325 330 335
 Asp Ser Leu Ile Cys Ile Lys Val Ile Glu Ser Val Lys Glu Met Glu
 340 345 350
 Glu Glu Gly Arg Ile Met His His Cys Val Gly Gly Tyr His Asn Lys
 355 360 365
 Ala Asn Ser Leu Ile Leu Ser Ala Thr Ile Asp Gly Lys Arg Ile Glu
 370 375 380
 Thr Ile Glu Val Ser Leu Lys Thr Leu Lys Val Val Gln Ser Arg Gly
 385 390 395 400
 Val Cys Asn Ser Asn Thr Glu Tyr His Asp Arg Ile Ile Arg Leu Val
 405 410 415
 Glu Asp Asn Ala Gly Leu Ile Arg Gln Arg Met Asn Ala Ala
 420 425 430

<210> 6977

<211> 93

<212> PRT

<213> B.fragilis

<400> 6977

Tyr Gln Pro Ile Ile Lys Asn Asn Met Asp Val Arg Phe Glu Ser Met
 1 5 10 15
 Val Cys Leu Trp Asp Asp Lys Ile Pro Thr Met Phe Leu Glu Phe Met
 20 25 30
 Asn Leu Leu Thr Phe Cys Gln Ser Glu Glu Gln Leu Arg Ala Gly Val
 35 40 45
 Lys Asp Phe Ser Glu Lys His Glu Leu Asp Lys Phe Phe Leu Tyr Gly
 50 55 60
 Phe Gly Ser His His Phe Tyr Leu His Gln Arg Tyr Thr Ser Asn Pro
 65 70 75 80
 Glu Met Val Met Gln Asn Arg Val Leu Ser Val His Phe
 85 90

<210> 6978

<211> 232

<212> PRT

<213> B.fragilis

<400> 6978

Lys Arg Leu Phe Met Tyr Ser Ile Leu Ile Ile Glu Asp Glu Gln Arg
 1 5 10 15
 Val Ala Asp Leu Leu Arg Ala Gly Leu Glu Glu Asn Gly Tyr Asn Cys
 20 25 30
 Leu Val Ala Tyr Asp Gly Ala Met Gly Leu Arg Met Phe Arg Ala Asn
 35 40 45
 Thr Phe Asp Leu Val Ile Ser Asp Ile Val Leu Pro Lys Met Asp Gly
 50 55 60
 Phe Glu Leu Cys Lys Glu Ile Arg Ala Ala Asn Pro Ala Ile Pro Ile
 65 70 75 80
 Leu Met Leu Thr Ala Leu Gly Ser Thr Asp Asp Lys Leu Asp Gly Phe
 85 90 95
 Asp Ala Gly Ala Asp Asp Tyr Met Val Lys Pro Phe Asp Phe Arg Glu
 100 105 110
 Leu Tyr Ala Arg Ile Arg Val Leu Leu Lys Arg Lys Leu Ala Val Val
 115 120 125
 Thr Asp Val Glu Glu Glu Leu Asn Tyr Ala Asp Leu Ser Val Asn Leu
 130 135 140
 Leu Asp Lys Ser Val Lys Arg Ala Gly Arg Asp Ile Lys Leu Ser Pro
 145 150 155 160
 Lys Glu Tyr Asn Leu Leu Val Tyr Met Ile Glu Asn Ala Glu Lys Val
 165 170 175
 Val Ser Arg Met Asp Ile Ala Asp Lys Val Trp Asn Thr His Phe Asp
 180 185 190
 Thr Gly Thr Asn Phe Ile Asp Val Tyr Ile Asn Tyr Leu Arg Lys Lys
 195 200 205
 Ile Asp Arg Asp Phe Asp Thr Lys Leu Ile His Thr Lys Thr Gly Met
 210 215 220
 Gly Phe Ile Leu Thr Asp Lys Leu
 225 230

<210> 6979

<211> 367

<212> PRT

<213> B.fragilis

<400> 6979

Phe Cys Gly Met Met Glu Lys Asn Lys Arg Val Leu Leu Gly Met Ser
 1 5 10 15
 Gly Gly Thr Asp Ser Ser Val Ala Ala Met Leu Leu Leu Glu Ala Gly
 20 25 30
 Tyr Glu Val Thr Gly Val Thr Phe Arg Phe Tyr Glu Phe Asn Gly Ser
 35 40 45
 Thr Glu Tyr Leu Glu Asp Ala Arg Ala Leu Ala Ala Arg Leu Gly Ile
 50 55 60
 Gly His Ile Thr Tyr Asp Ala Arg Lys Val Phe Gln Glu Gln Ile Ile
 65 70 75 80
 Asp Tyr Phe Ile Asp Glu Tyr Met Ser Gly His Thr Pro Val Pro Cys
 85 90 95
 Thr Leu Cys Asn Asn Gln Leu Lys Trp Pro Leu Leu Ala Lys Ile Ala
 100 105 110
 Asp Glu Met Gly Ile Phe Tyr Leu Ala Thr Gly His Tyr Val Arg Lys
 115 120 125
 Gln Trp Val Asp Gly Asn Tyr Tyr Ile Ala Pro Ala Glu Asp Val Asp
 130 135 140
 Lys Asp Gln Ser Phe Phe Leu Trp Gly Leu Lys Gln Glu Ile Leu Gln
 145 150 155 160
 Arg Met Leu Leu Pro Met Gly Gly Met Thr Lys Ser Glu Ala Arg Ala

165 170 175
 Tyr Ala Ala Gly Arg Gly Phe Glu Lys Ile Ser Lys Lys Lys Asp Ser
 180 185 190
 Ile Gly Val Cys Phe Cys Pro Leu Asp Tyr Arg Ser Phe Leu Lys Lys
 195 200 205
 Cys Leu Cys Asp Glu Ser Gly Asp Lys Asn Arg Asn Ile Tyr Arg Lys
 210 215 220
 Val Glu Arg Gly Arg Phe Leu Asp Glu Ser Gly Asn Phe Ile Ala Trp
 225 230 235 240
 His Glu Gly Tyr Pro Phe Tyr Thr Ile Gly Gln Arg Arg Gly Leu Gly
 245 250 255
 Ile Gln Leu Asn Arg Ala Val Phe Val Lys Glu Ile His Pro Glu Thr
 260 265 270
 Asn Glu Val Val Leu Ala Ser Leu Lys Ser Leu Glu Lys Ser Glu Met
 275 280 285
 Trp Leu Lys Asp Trp Asn Ile Val Asp Glu Ser Arg Leu Leu Gly Cys
 290 295 300
 Asp Asp Val Ile Val Lys Ile Arg Tyr Arg Lys Gln Glu Asn His Cys
 305 310 315 320
 Ser Val Thr Ile Thr Pro Glu Gly Leu Leu His Ile Arg Leu His Glu
 325 330 335
 Pro Leu Ser Ala Ile Ala Glu Gly Gln Ala Ala Ala Phe Tyr Lys Asp
 340 345 350
 Gly Leu Leu Gly Gly Gly Ile Ile Thr Met Ser Asp Gln Arg
 355 360 365

<210> 6980

<211> 190

<212> PRT

<213> B.fragilis

<400> 6980

Ile Ser Ile Phe Val Arg Lys Cys Arg Leu Leu Met Ile Arg Ile Phe
 1 5 10 15
 Leu Thr Gly Tyr Met Gly Ala Gly Lys Thr Thr Leu Gly Lys Ala Leu
 20 25 30
 Ala Arg Glu Leu His Ile Pro Phe Ile Asp Leu Asp Trp Tyr Ile Glu
 35 40 45
 Glu Arg Phe His Lys Thr Val Gly Glu Leu Phe Ser Glu Arg Gly Glu
 50 55 60
 Ala Ser Phe Arg Glu Leu Glu Lys Asn Met Leu His Glu Val Gly Glu
 65 70 75 80
 Phe Glu Asp Val Val Ile Ser Thr Gly Gly Gly Ala Pro Cys Phe Phe
 85 90 95
 Asp Asn Met Glu Tyr Met Asn Arg Val Gly Thr Thr Val Phe Leu Asp
 100 105 110
 Val Asp Pro Lys Val Leu Phe Ser Arg Leu Arg Val Ala Lys Gln Gln
 115 120 125
 Arg Pro Ile Leu Gln Gly Lys Lys Asp Asp Glu Leu Leu Asp Phe Ile
 130 135 140
 Val Gln Ala Leu Glu Lys Arg Ala Pro Phe Tyr Arg Gln Ala Asn Tyr
 145 150 155 160
 Ile Tyr Cys Ala Asp Lys Leu Glu Asp Arg Ser Gln Ile Glu Thr Ser
 165 170 175
 Val Gln Gln Leu Arg Lys Leu Leu Asn Leu His Ile Ala Ser
 180 185 190

<210> 6981

<211> 425

<212> PRT

<213> B.fragilis

<400> 6981

Phe	Asp	Phe	Ile	Ser	Met	Glu	Leu	Lys	Arg	Val	Val	Val	Thr	Gly	Leu
1				5					10					15	
Gly	Ala	Ile	Thr	Pro	Val	Gly	Asn	Asn	Val	Pro	Glu	Phe	Trp	Glu	Asn
			20					25					30		
Leu	Val	Asn	Gly	Val	Ser	Gly	Ala	Gly	Pro	Ile	Thr	His	Phe	Asp	Ala
		35					40					45			
Ser	Gln	Phe	Lys	Thr	Gln	Phe	Ala	Cys	Glu	Val	Lys	Gly	Phe	Asp	Ala
	50					55					60				
Thr	Gln	Tyr	Ile	Asp	Arg	Lys	Glu	Ala	Arg	Lys	Met	Asp	Leu	Tyr	Thr
65					70					75				80	
Gln	Tyr	Ala	Val	Ala	Val	Ala	Lys	Glu	Ala	Val	Ala	Asp	Ser	Gly	Leu
				85					90					95	
Asp	Ile	Glu	Asn	Glu	Asp	Leu	Asn	Arg	Ile	Gly	Val	Ile	Phe	Gly	Ala
			100					105					110		
Gly	Ile	Gly	Gly	Ile	Arg	Thr	Phe	Glu	Glu	Glu	Thr	Ser	Asn	Tyr	Ala
		115					120					125			
Leu	His	Lys	Glu	Asn	Gly	Pro	Lys	Tyr	Asn	Pro	Phe	Phe	Ile	Pro	Lys
	130					135					140				
Met	Ile	Ser	Asp	Ile	Ala	Ala	Gly	Gln	Ile	Ser	Ile	Met	Tyr	Gly	Phe
145					150					155				160	
His	Gly	Pro	Asn	Tyr	Ala	Thr	Cys	Ser	Ala	Cys	Ala	Thr	Ser	Thr	Asn
				165					170					175	
Ala	Ile	Ala	Asp	Ala	Phe	Asn	Leu	Ile	Arg	Leu	Gly	Lys	Ala	Asn	Val
			180					185					190		
Ile	Val	Ser	Gly	Gly	Ser	Glu	Ala	Ala	Ile	Ala	Ala	Ala	Gly	Val	Gly
		195					200					205			
Gly	Phe	Asn	Ala	Met	His	Ala	Leu	Ser	Thr	Arg	Asn	Asp	Glu	Pro	Gln
	210					215					220				
Ser	Ala	Ser	Arg	Pro	Phe	Ser	Ala	Ser	Arg	Asp	Gly	Phe	Val	Met	Gly
225					230					235				240	
Glu	Gly	Gly	Gly	Cys	Leu	Ile	Leu	Glu	Glu	Leu	Glu	His	Ala	Lys	Ala
				245				250						255	
Arg	Gly	Ala	Lys	Ile	Tyr	Ala	Glu	Val	Ala	Gly	Val	Gly	Met	Ser	Ala
			260					265					270		
Asp	Ala	His	His	Leu	Thr	Ala	Ser	His	Pro	Glu	Gly	Leu	Gly	Ala	Lys
		275					280					285			
Leu	Val	Met	Lys	Asn	Ala	Leu	Glu	Asp	Ala	Glu	Met	Ser	Pro	Glu	Glu
	290					295					300				
Val	Asp	Tyr	Ile	Asn	Val	His	Gly	Thr	Ser	Thr	Pro	Val	Gly	Asp	Ile
305					310					315				320	
Ser	Glu	Ala	Lys	Ala	Ile	Lys	Glu	Val	Phe	Gly	Glu	His	Ala	Phe	Glu
				325					330					335	
Leu	Asn	Ile	Ser	Ser	Thr	Lys	Ser	Met	Thr	Gly	His	Leu	Leu	Gly	Ala
			340					345					350		
Ala	Gly	Ala	Val	Glu	Ser	Ile	Ala	Ser	Ile	Leu	Ala	Ile	Lys	Asn	Gly
		355					360					365			
Ile	Val	Pro	Pro	Thr	Ile	Asn	His	Ala	Glu	Gly	Asp	Asn	Asp	Glu	Asn
	370					375					380				
Ile	Asp	Tyr	Asn	Leu	Asn	Phe	Thr	Phe	Asn	Lys	Ala	Gln	Lys	Arg	Glu
385					390					395				400	
Ile	Asn	Val	Ala	Leu	Ser	Asn	Thr	Phe	Gly	Phe	Gly	Gly	His	Asn	Ala
				405					410					415	
Cys	Val	Ile	Phe	Lys	Lys	Tyr	Ala	Glu							
			420					425							

<400> 6982

<210> 6983

$\langle 211 \rangle$ 311

<212> PRT

<213> B.fragilis

<400> 6983

[illegible]

Val Tyr Ile His Arg Ile Asn Lys Arg Lys Thr Asn Asp Lys Leu Ile
 275 280 285
 Phe Lys Lys Tyr Val Arg Lys Gly Cys Trp Asp Gly Leu Thr Phe Asn
 290 295 300
 Pro Gln Ile Glu Tyr Leu Pro
 305 310

<210> 6984
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 6984
 Ile Leu Ser Phe Leu Gln Val Ser Val Gly Trp Gln Leu His Phe Phe
 1 5 10 15
 Ser Phe Trp Ala Ala Leu Ile Lys Ile Tyr Ser Tyr Phe Arg Leu Tyr
 20 25 30
 Thr Phe Met Ser Ile Tyr Val Lys Asn Pro Ala Asp Leu Val Tyr Val
 35 40 45
 Leu Ser Val Thr Ile Cys Lys Thr Ile Phe Asp Pro Gln Arg Gly
 50 55 60

<210> 6985
 <211> 162
 <212> PRT
 <213> B.fragilis

<400> 6985
 Arg Asn Lys Ile Met Lys Ser Val Leu Leu Met Cys Trp Met Ala Leu
 1 5 10 15
 Leu Ser Val Ala Val Ser Ala Gln Asp Phe Asp Ser Arg Phe Met Ala
 20 25 30
 Glu His Gln Ala Asp Ser Asn Leu Thr Cys Val Thr Ile Ser Pro Lys
 35 40 45
 Met Met Glu Glu Ile Met Lys Ser Asp Ala Glu Lys Asp Lys Glu Val
 50 55 60
 Leu Asp Met Ile Ser Asn Leu Lys Ser Met Gln Val Leu Thr Ser Asp
 65 70 75 80
 Val Glu Gly Lys Lys Tyr Phe Asn Ala Ala Leu Lys Val Val Glu Lys
 85 90 95
 Asn Ser Gly Arg Phe Glu Ser Phe Leu Ser Phe Lys Asp Lys Ser Glu
 100 105 110
 Asn Cys Gln Ile Met Val Arg Lys Lys Lys Ser Thr Ile Val Glu Leu
 115 120 125
 Val Met Leu Met His Glu Lys Asn His Phe Ala Val Val Asn Phe Thr
 130 135 140
 Gly Asn Met Ser Pro Glu Phe Ile Ala Gln Ile Lys Arg His Phe His
 145 150 155 160
 Leu Leu

<210> 6986
 <211> 456
 <212> PRT
 <213> B.fragilis

<400> 6986
 Val Met Lys Ile Arg Ser Ile Leu Thr Ile Lys Tyr Ala Gly Ile Thr
 1 5 10 15

Ala Thr Ile Phe Leu Val Phe Met Ala Thr Ile Tyr Cys Val Asn Glu
 20 25 30
 His Leu Arg Ser Asp Ser Phe Tyr Arg Ser Leu Arg Ser Glu Ala Ile
 35 40 45
 Thr Lys Ala His Leu Phe Leu Asn Asn Gln Val Asp Val Glu Thr Met
 50 55 60
 Gln Ser Ile Tyr Leu Asn Asn Arg Gln Phe Ile Asp Glu Val Glu Val
 65 70 75 80
 Ala Val Tyr Thr Pro Asp Phe Arg Ile Leu Tyr His Asp Ala Leu His
 85 90 95
 Asn Asp Ile Ile Lys Glu Thr Pro Gly Met Ile Asp Glu Ile Val Arg
 100 105 110
 Lys Lys Glu Ile Asp Phe Arg Thr Gly Asp Tyr Gln Gly Ile Gly Ile
 115 120 125
 Leu Tyr Glu Phe Gly Gly Lys Asn Tyr Val Val Thr Ala Ala Ala Tyr
 130 135 140
 Asp Arg Tyr Gly His Ile Asn Gln Val Ile Met Thr Arg Leu Leu Leu
 145 150 155 160
 Leu Leu Ser Ile Gly Gly Leu Ser Val Leu Val Ile Val Gly Tyr Met
 165 170 175
 Leu Ala Lys Ser Ser Leu Ala Pro Ile Arg Ser Ile Val Arg Lys Ala
 180 185 190
 Glu Gly Ile Thr Val Thr Gln Ile Asp Glu Arg Leu Pro Val Lys Asn
 195 200 205
 Glu His Asp Glu Leu Gly Glu Leu Ala Leu Ala Phe Asn Ala Leu Leu
 210 215 220
 Asp Arg Val Glu Lys Thr Phe Asn Asp Gln Arg Met Phe Val Ser Asn
 225 230 235 240
 Val Ser His Glu Leu Arg Thr Pro Met Ala Ala Leu Ser Ala Glu Leu
 245 250 255
 Asp Leu Ala Leu Gln Lys Glu Arg Thr Val Thr Gln Tyr Gln Asn Ser
 260 265 270
 Ile His Asn Ala Leu Gln Asp Ser Gln Arg Val Ile Glu Leu Ile Asp
 275 280 285
 Gly Leu Leu Asn Leu Ala Lys Ala Asp Tyr Tyr Pro Glu Gln Ile Lys
 290 295 300
 Lys Glu Glu Ile Arg Leu Asp Glu Leu Leu Leu Asp Ala Asn Glu Leu
 305 310 315 320
 Val Leu Lys Ala His Pro Asp Tyr His Ile Glu Leu Ile Phe Glu Gln
 325 330 335
 Glu Ala Asp Asp Asp Arg Val Leu Thr Val Ile Gly Asn Pro Tyr Leu
 340 345 350
 Leu Thr Thr Ala Phe Val Asn Leu Ile Glu Asn Asn Cys Lys Tyr Ser
 355 360 365
 Asp Asn Arg Thr Ser Phe Ile Gln Ile Ser Phe Cys Asp Gln Trp Thr
 370 375 380
 Ile Val Ser Leu Ser Asp Asn Gly Ala Gly Met Ser Glu Thr Asp Lys
 385 390 395 400
 Glu Asn Leu Phe Lys Leu Phe Tyr Arg Gly Glu Asn Lys Asn Gln Ala
 405 410 415
 Gln Gly His Gly Ile Gly Met Thr Leu Thr Lys Lys Ile Leu Thr Leu
 420 425 430
 His Lys Ser Glu Ile Ser Val Tyr Ser His Gln Gly Glu Gly Thr Thr
 435 440 445
 Phe Val Val Arg Phe His His Leu
 450 455

<210> 6987

<211> 887

<212> PRT

<213> B.fragilis

<400> 6987

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Ser Ala Lys Ile Met Ile Trp Arg Lys Lys Glu Lys Lys Lys Ala Gln
1      5      10      15
Tyr Gln Phe Asn Ser Glu Arg Val Phe Leu Val Ala Thr Gln Pro Ala
20     25     30
Lys Thr Ala Tyr Ser Tyr Phe Gln Thr Ser Ser Val Gly Leu Ser Glu
35     40     45
Glu Glu Ile Gly Gln Arg Gln Ser Ala Tyr Gly Lys Asn Glu Ile Ser
50     55     60
Arg Glu Gln Lys Lys Asn Pro Leu Val Leu Phe Ile Arg Thr Phe Ile
65     70     75     80
Asn Pro Phe Ile Gly Val Leu Thr Ala Leu Ala Val Ile Ser Leu Val
85     90     95
Ile Asp Val Val Met Ala Arg Pro Glu Asp Arg Glu Trp Thr Ala Val
100    105    110
Leu Ile Ile Ile Ser Met Val Val Cys Ser Ala Ile Leu Arg Phe Trp
115    120    125
Gln Glu Trp Lys Ala Ser Glu Ala Thr Asp Ser Leu Met Lys Met Val
130    135    140
Lys Asn Thr Cys Phe Val Lys Arg Phe Ser Gly Ser Glu Glu Val Asp
145    150    155    160
Ile Thr Glu Leu Val Pro Gly Asp Val Val Cys Leu Ala Ala Gly Asp
165    170    175
Met Ile Pro Ala Asp Ile Arg Ile Ile Glu Ser Lys Asp Leu Phe Val
180    185    190
Ser Gln Ala Ser Leu Thr Gly Glu Ser Asp Pro Val Glu Lys Phe Pro
195    200    205
Glu Ile Asn Gly Arg Arg His Ser His Gly Ser Val Ile Glu Leu Asp
210    215    220
Asn Ile Cys Tyr Met Gly Ser Thr Val Ile Ser Gly Ser Ala Lys Gly
225    230    235    240
Ile Val Phe Gly Thr Gly Asn Asp Thr Tyr Leu Gly Thr Ile Ala Arg
245    250    255
Ser Leu Val Gly Glu Arg Ala Thr Thr Ala Phe Asp Lys Gly Ile Ser
260    265    270
Lys Val Ser Phe Leu Leu Ile Arg Phe Met Leu Val Met Val Pro Phe
275    280    285
Val Phe Phe Val Asn Gly Phe Thr Lys Gly Asp Trp Phe Glu Ala Phe
290    295    300
Ile Phe Ala Leu Ser Val Ala Val Gly Leu Thr Pro Glu Met Leu Pro
305    310    315    320
Met Ile Val Thr Ala Asn Leu Ser Lys Gly Ala Val Ser Met Ser Lys
325    330    335
Lys Lys Thr Val Val Lys Asn Leu Asn Ala Ile Gln Asn Phe Gly Ala
340    345    350
Met Asn Ile Leu Cys Thr Asp Lys Thr Gly Thr Leu Thr Cys Asp Lys
355    360    365
Ile Val Leu Glu Lys Tyr Ile Asn Ala Asp Gly Ser Asp Asp His Ser
370    375    380
Arg Arg Ile Leu Arg His Ala Phe Leu Asn Ser Tyr Phe Gln Thr Gly
385    390    395    400
Leu Lys Asn Leu Met Asp Lys Ala Ile Leu Ala His Val Arg Glu Glu
405    410    415
Asn Leu Glu His Leu Thr Glu Gly Tyr Thr Lys Ile Asp Glu Ile Pro
420    425    430
Phe Asp Phe Ser Arg Arg Arg Met Ser Val Val Ile Glu Asp Gln Gln

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435	440	445
Gly Lys Arg Gln Ile Ile Thr	Lys Gly Ala Val Glu Glu Met Leu Asn	
450	455	460
Ile Cys Ser His Ala Glu Phe Asn Gly Gln Val Tyr Glu Leu Thr Asp		
465	470	475
Lys Leu Arg Ser Lys Ala Lys Arg Ile Ser Asp Asp Met Asn Arg Asn		
485	490	495
Gly Met Arg Val Leu Ala Ile Ala Gln Lys Ser Phe Ile Ser Lys Ala		
500	505	510
Arg Asp Phe Ala Val Thr Asp Glu Asp Glu Met Val Leu Ile Gly Tyr		
515	520	525
Leu Ala Phe Leu Asp Pro Pro Lys Pro Ser Ser Ala Glu Ala Ile Arg		
530	535	540
Gln Leu Arg Glu Tyr Gly Ile Glu Val Lys Ile Leu Ser Gly Asp Asn		
545	550	555
Asp Val Ile Val Ser Ala Ile Ala Arg Gln Ile Gly Ile Asp Thr Cys		
565	570	575
His Ser Val Thr Gly Val Glu Leu Glu Gly Lys Asp Gly Glu Glu Leu		
580	585	590
Arg Glu Ile Val Gly Gln Ala Thr Leu Phe Ser Arg Leu Thr Pro Leu		
595	600	605
Gln Lys Ser Glu Ile Ile Met Ile Leu Gln Gln Asn Gly Asn Thr Val		
610	615	620
Gly Phe Leu Gly Asp Gly Val Asn Asp Ala Gly Ala Leu Arg Gln Ser		
625	630	635
Asp Ile Gly Ile Ser Val Asp Ser Ala Val Asp Ile Ala Lys Glu Ser		
645	650	655
Ala Asp Ile Ile Leu Leu Asp Lys Asp Leu Ser Val Leu Lys Glu Gly		
660	665	670
Val Leu Glu Gly Arg Lys Thr Phe Gly Asn Ile Thr Lys Tyr Ile Lys		
675	680	685
Met Thr Ala Ser Ser Asn Phe Gly Asn Met Phe Ser Val Met Phe Ala		
690	695	700
Ser Ala Phe Leu Pro Phe Leu Pro Met Leu Pro Ile His Leu Leu Ile		
705	710	715
Gln Asn Leu Leu Tyr Asp Ile Ser Gln Thr Thr Ile Pro Phe Asp Arg		
725	730	735
Met Asp Ala Glu Phe Leu Lys Gln Pro Gln Lys Trp Asp Ala Ser Asp		
740	745	750
Leu Ser Arg Phe Met Ile Tyr Ile Gly Pro Ile Ser Ser Val Phe Asp		
755	760	765
Ile Ala Thr Tyr Cys Leu Met Trp Tyr Val Phe Ala Cys Asn Ser Pro		
770	775	780
Glu His Gln Thr Leu Phe Gln Ser Gly Trp Phe Val Glu Gly Leu Leu		
785	790	795
Ser Gln Thr Leu Ile Val His Met Ile Arg Thr Arg Lys Ile Pro Phe		
805	810	815
Phe Gln Ser Arg Ala Thr Trp Pro Val Leu Gly Leu Thr Phe Leu Ile		
820	825	830
Met Ala Met Gly Ile Ala Ile Pro Phe Thr Ser Phe Gly Leu Ser Ile		
835	840	845
Gly Leu Glu Pro Leu Pro Leu Ser Tyr Phe Pro Trp Leu Val Leu Ile		
850	855	860
Leu Val Ser Tyr Cys Val Leu Thr Gln Phe Met Lys Ser Trp Tyr Ile		
865	870	875
Arg Arg Phe Ser Lys Trp Leu		
885		

<210> 6988

Leu	Tyr	Gly	Val	Phe	His	Leu	Leu	Gln	Phe	Arg	Phe	Lys	Val	Met	Leu
1				5					10					15	
Ala	Leu	Leu	Gln	Thr	Phe	Gln	His	Arg	Pro	Arg	Tyr	Val	Leu	Ser	Leu
			20					25					30		
Leu	Ala	Gln	His	Phe	Glu	Val	Phe	Leu	His	Arg	Val	Lys	Leu	Arg	Leu
		35					40				45				
Gln	Asp	Ala	Leu	Leu	Gln	Leu	Arg	Arg	Leu	Arg	Tyr	Leu	Ala	Glu	Leu
	50					55					60				
Val	Val	Arg	His	Asn	Asp	Thr	Ile	Val	Val	Val	Val	Leu	Asp	Val	Val
65				70						75					80
Glu	Glu	Thr	His	Ala	Val	Gly	Gly	Arg	Lys	Val	Phe	Leu	Arg	Ser	Val
			85						90					95	
Gln	Asn	Pro	Arg	Val	Gly	Ile	Cys	Arg	Leu	Ile	Gly	Gly	Gly	Asn	Leu
			100					105					110		
Arg	Asn	Ile	Gly	Phe	Gln	Pro	Asp	Asn	His	Arg	Leu	Val	Arg	Gln	Val
		115					120					125			
Gln	Thr	Leu	His	Phe	Met	Arg	Gly	Asp	Ala	His	Tyr	Gln	Arg	Leu	Ala
	130					135					140				
Gly	Ser	Asn	Leu	Val		Thr	Asn	Ser	Ala	Ala	Val	Leu	Phe	Gln	His
145				150						155					160
Pro	Asp	Ala	Ile	His	Leu	Arg	Gly	Ile	Asp	Ala	Pro	Asp	Ala	Pro	Ala
			165						170					175	
Cys	Gln	Pro	Phe	Gln	Ile	Glu	Val	Gly	Lys	Ser	Leu	Met	Arg	Ala	Val
			180					185					190		

Ile Leu Arg Ala His Glu Thr Val Glu Leu Ala Val Ile His Arg Arg
 195 200 205
 Gln Pro Leu Leu Glu Leu Trp Arg Leu Leu Phe Glu Pro Phe Gly Glu
 210 215 220
 Ala Val Ser Tyr Leu Val Asn Leu Gly Val Gly Glu Leu Tyr Ser Leu
 225 230 235 240
 Ala Val Ala His Leu Asp Val Val Ala Met Leu Val Pro Ala Asp Gly
 245 250 255
 Leu His His Val Gly Thr Gly Val Val Gln Gly Val Phe Gln Lys Val
 260 265 270
 His Ala Val Ile Val Thr Val Ile Pro Leu His Gln Lys Leu Val Arg
 275 280 285
 Asp Phe His Gly Ala Val Ala Ala Arg His Arg Lys Leu Val His Ala
 290 295 300
 Cys Arg Val Gly Asp Phe His Leu Arg Val Glu Gln Pro Ala His Val
 305 310 315 320
 Gly Gly Ile Asp Thr Arg Arg Asn Pro Ala Phe Pro Glu Ile Glu Ile
 325 330 335
 Lys Val Phe Lys Ser Asp Ala Arg Arg Phe Gly Ile Phe Gln Ser Leu
 340 345 350
 Gln Arg Leu Leu His Leu Arg His Thr Phe Thr Phe Gly Val Phe Ala
 355 360 365
 His Pro Ser Leu Tyr Ala Phe Arg Phe Leu Tyr His Val Ser Gly Asn
 370 375 380
 Lys Ala Val Leu Asn Leu Val Thr Gly Tyr Glu Arg Ile Val Ile Asp
 385 390 395 400
 Ala Pro Leu Gln Gly Cys Glu Gln Ile Leu Arg Arg Thr Val Gly Tyr
 405 410 415
 Leu Pro His Ile Val Glu Ile Asp Ser Ala Glu Leu Val Glu Arg Arg
 420 425 430
 Gly Gln Cys Phe Phe Gly
 435

<210> 6991
 <211> 126
 <212> PRT
 <213> B.fragilis

<400> 6991
 Ser Asn Gln Val Ser Thr Ala Arg Lys Arg Thr Ile His Pro Phe Asn
 1 5 10 15
 Gly Thr Lys Gln Glu Gln Phe Met Asn Lys Asn Ile Arg Gln Lys Leu
 20 25 30
 Ile Ile Ser Ala Ala Leu Met Ile Ala Ala Thr Ala Ser Ala Phe Ala
 35 40 45
 Gln Gly Asn Gly Leu Ala Gly Ile Asn Glu Ala Thr Ser Met Val Ser
 50 55 60
 Ser Tyr Phe Asp Pro Gly Thr Lys Leu Ile Tyr Ala Ile Gly Ala Val
 65 70 75 80
 Val Gly Leu Ile Gly Gly Val Lys Val Tyr Gly Lys Phe Ser Ser Gly
 85 90 95
 Asp Pro Asp Thr Ser Lys Thr Ala Ala Ser Trp Phe Gly Ala Cys Ile
 100 105 110
 Phe Leu Ile Val Ala Ala Thr Ile Leu Arg Ser Phe Phe Leu
 115 120 125

<210> 6992
 <211> 82
 <212> PRT

<213> B.fragilis

<400> 6992

Lys Leu Lys Val Met Ser Glu Ile Ala Ser Arg Val Lys Ala Ile Ile
 1 5 10 15
 Val Asp Lys Leu Gly Val Glu Glu Ser Glu Val Thr Glu Thr Ala Ser
 20 25 30
 Phe Thr Asn Asp Leu Gly Ala Asp Ser Leu Asp Thr Val Glu Leu Ile
 35 40 45
 Met Glu Phe Glu Lys Glu Phe Gly Ile Ser Ile Pro Asp Asp Gln Ala
 50 55 60
 Glu Lys Ile Gly Thr Val Gln Asp Ala Val Ala Tyr Ile Glu Glu His
 65 70 75 80
 Ala Lys

<210> 6993

<211> 351

<212> PRT

<213> B.fragilis

<400> 6993

Leu Phe Ser Phe Lys Tyr Val Ile Phe Asn Lys Lys Arg Ala Ala Met
 1 5 10 15
 Lys Ile Gly Ile Leu Thr Ser Gly Gly Asp Cys Pro Gly Ile Asn Ala
 20 25 30
 Thr Ile Arg Gly Val Cys Lys Thr Ala Ile Asn His Tyr Gly Met Glu
 35 40 45
 Val Val Gly Ile His Ser Gly Phe Gln Gly Leu Leu Thr Lys Glu Val
 50 55 60
 Glu Ser Phe Thr Glu Lys Ser Leu Ser Gly Leu Leu Asn Leu Gly Gly
 65 70 75 80
 Thr Met Leu Gly Thr Ser Arg Glu Lys Pro Phe Arg Lys Gln Gly Ile
 85 90 95
 Ile Ser Asp Val Asp Lys Pro Ala Leu Ile Gln Arg Asn Ile Ala Glu
 100 105 110
 Leu Gly Leu Asp Cys Val Val Cys Ile Gly Gly Asn Gly Thr Gln Lys
 115 120 125
 Thr Ala Ala Lys Phe Ala Ala Met Gly Ile Asn Ile Val Ser Val Pro
 130 135 140
 Lys Thr Ile Asp Asn Asp Ile Trp Gly Thr Asp Ile Ser Phe Gly Phe
 145 150 155 160
 Asp Ser Ala Val Ser Ile Ala Thr Asp Ala Ile Asp Arg Leu His Ser
 165 170 175
 Thr Ala Ser Ser His Lys Arg Val Met Val Ile Glu Val Met Gly His
 180 185 190
 Lys Ala Gly Trp Ile Ala Leu Tyr Ser Gly Met Ala Gly Gly Gly Asp
 195 200 205
 Val Ile Leu Val Pro Glu Ile Pro Tyr Asn Ile Lys Asn Ile Gly Asp
 210 215 220
 Thr Ile Leu Asn Arg Leu Lys Lys Gly Lys Pro Tyr Ser Ile Val Val
 225 230 235 240
 Val Ala Glu Gly Ile Gln Thr Asp Gly Arg Lys Arg Ala Ala Glu Tyr
 245 250 255
 Ile Ala Gln Glu Ile Glu Tyr Glu Thr Gly Ile Glu Thr Arg Glu Thr
 260 265 270
 Val Leu Gly Tyr Ile Gln Arg Gly Gly Ser Pro Thr Pro Phe Asp Arg
 275 280 285
 Asn Leu Ser Thr Arg Met Gly Gly His Ala Thr Glu Leu Ile Ala Asn

290		295		300
Gly Gln Phe Gly Arg Met Ile Ala Leu Lys Gly Asp Glu Ile Ser Ser				
305		310		315
Val Ala Leu Glu Glu Val Ala Gly Lys Leu Lys Leu Val Thr Glu Glu				
	325		330	335
His Asp Leu Val Val Gln Gly Arg Arg Met Gly Ile Cys Phe Gly				
	340		345	350

<210> 6994
 <211> 391
 <212> PRT
 <213> B.fragilis

<400> 6994

Tyr Ser Leu Phe Tyr Leu Ile Leu Val Met Val Lys Lys Ile Leu Val				
1	5	10	15	
Asp Lys Tyr Asp Leu Phe Val Leu Ser Ser Leu Ile His Tyr Leu Ile				
	20	25	30	
Asn Leu Leu Tyr Met Cys Glu Ile Arg Phe Leu Leu Phe Ile Leu Phe				
	35	40	45	
Met Gly Cys Leu Cys Ala Cys Gly Arg Val Asp Leu Lys Ser Pro Lys				
	50	55	60	
Thr Leu Phe Ser Ser Val Ser Glu Ile Ser Glu Val Glu Trp Ser Ile				
65	70	75	80	
Glu Ala Asp Ser Leu Ala Arg Val Glu Gly Ile Gln Cys Asn Asp Ser				
	85	90	95	
Val Leu Leu Val Phe Asp Phe Tyr Ser Gly Lys Ser Tyr Ser Leu Phe				
	100	105	110	
Asp Ile Tyr Ser Gly Lys Met Ile Ser Arg Leu Gly Ser Ile Gly Gln				
	115	120	125	
Gly Arg Asp Glu Ile Pro Leu Gly Val Phe Gly Tyr Ile Glu Asn Asn				
	130	135	140	
Arg Phe Tyr Ile Tyr Tyr Asp Gln Thr Gly Tyr Ile Gly Lys Phe Asn				
145	150	155	160	
Leu Asp Ser Cys Ser Val Ile Leu Asp Cys Pro Pro Val Cys Leu Ala				
	165	170	175	
Lys Tyr Lys Ile Pro Gly Ala Gln Ile Ser Lys Ile Ala Val Val Asn				
	180	185	190	
Asp Ser Leu Phe Leu Gly Ala Gly Thr Tyr Asn Ala Glu Tyr Gln Tyr				
	195	200	205	
Leu Leu Phe Asp Asn Lys Ser Asn Val Ile Asp Ser Ala Val Thr Ile				
	210	215	220	
Tyr Asn Ser Asn Glu Ala Asn Leu Asn Ile Tyr His Lys Phe Leu Ser				
225	230	235	240	
Asn Gln Gly Arg Leu Arg Lys Arg Pro Gly Lys Ser Gln Phe Val Tyr				
	245	250	255	
Ser Ile Asn Asn Ser Ser Asn Ile Asp Phe Phe Glu Ile Lys Asn Asn				
	260	265	270	
Lys Ile Asn Leu Ile Lys Ser Leu Arg Phe Asn Asn Pro Glu Tyr Thr				
	275	280	285	
Pro Thr Gln Asp Gly Asp Tyr Ser Arg Val Leu Phe Ser Asp Asn Asn				
	290	295	300	
Val Ile Gly Tyr Ile Asp Ile Gly Val Thr Asp Lys Tyr Val Tyr Thr				
305	310	315	320	
Leu Tyr Thr Asn Lys Lys Ile Cys Asp Asn Asn Thr Tyr Asn Asp Leu				
	325	330	335	
Ser Ser Thr Thr Val Leu Val Phe Asp Trp Asn Gly Asn Pro Val Lys				
	340	345	350	
Gln Tyr Glu Leu Ser Lys Glu Ala Tyr Tyr Ile Thr Ile Asp Lys Thr				

355 360 365
 Leu Gln Arg Met Tyr Ala Val Val Arg Lys Pro Asp Met Gly Trp Thr
 370 375 380
 Ile Val Cys Tyr Ala Ile Asp
 385 390

<210> 6995
 <211> 207
 <212> PRT
 <213> B.fragilis

<400> 6995
 Met Gln Ser Phe Ala His Phe Ser Leu Phe Cys Ala Leu Lys Gly Leu
 1 5 10 15
 Ile Met Gly Lys Asn Ile Ala Ile Phe Ala Ser Gly Ser Gly Thr Asn
 20 25 30
 Ala Glu Asn Ile Ile Arg Tyr Phe Glu Lys Asn Ala Ser Val Arg Val
 35 40 45
 Arg Leu Val Leu Ser Asn Arg Lys Asp Ala Tyr Val Leu Glu Arg Ala
 50 55 60
 Cys Arg Leu Gly Val Pro Tyr Arg Ala Phe Pro Lys Ser Asp Trp Glu
 65 70 75 80
 Ala Ala Glu Ser Ile Leu Asp Leu Leu Arg Lys Tyr Gln Ile Asp Phe
 85 90 95
 Ile Val Leu Ala Gly Phe Leu Leu Arg Ile Pro Asp Ala Leu Leu His
 100 105 110
 Ala Tyr Pro Asp Lys Ile Ile Asn Ile His Pro Ala Leu Leu Pro Lys
 115 120 125
 Phe Gly Gly Lys Gly Met Tyr Gly Asp Arg Val His Glu Ala Val Val
 130 135 140
 Met Ala Gly Glu Ser Glu Ser Gly Ile Thr Ile His Tyr Ile Asp Glu
 145 150 155 160
 His Tyr Asp Glu Gly Ser Thr Val Phe Gln Ala Lys Cys Pro Val Leu
 165 170 175
 Pro Gly Asp Thr Pro Ala Asp Val Ala Lys Lys Val His Ala Leu Glu
 180 185 190
 Tyr Glu Trp Phe Pro Lys Ile Ile Glu Arg Val Val Asn Ser Leu
 195 200 205

<210> 6996
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 6996
 Pro Val Leu Ser Phe Gln Phe Ala Cys Tyr Leu Leu Ala Pro Val Lys
 1 5 10 15
 Ile Val Pro Gly Val Tyr Ala Pro Ala Ile Leu Val His Pro Asp Arg
 20 25 30
 His Asn Met Gln Met Val Ala Val Asp Val Leu Val Leu Glu Asn Glu
 35 40 45
 Ile Arg Leu Val Ala Glu Ala His Leu Leu Gln Ile Leu Pro Cys Asp
 50 55 60
 Ile Leu Lys Leu Arg Val Arg Gln Asn Ile Val Gly Met Arg Ile Glu
 65 70 75 80

<210> 6997
 <211> 111
 <212> PRT

<213> B.fragilis

<400> 6997

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Ser Tyr Tyr Ser Pro Thr Glu Ser Lys Val Met Met Asn Glu Asn Asn
1          5          10          15
Asp Val Phe Thr Leu Glu Asn Glu Pro Leu Ala Thr Val Val Gln Asn
          20          25          30
Met Arg Lys Gly Ser Lys Trp Leu Ser Thr Phe Leu Glu Ser Tyr Arg
          35          40          45
Pro Pro Leu Asp Gly Glu Arg Tyr Leu Thr Asp Arg Glu Val Ala Glu
          50          55          60
Leu Leu Arg Val Ser Arg Arg Thr Leu Gln Glu Tyr Arg Asn Asn Arg
65          70          75          80
Val Leu Pro Phe Ile Leu Leu Gly Gly Lys Val Leu Tyr Pro Glu Ser
          85          90          95
Gly Leu Arg Glu Leu Leu Glu Ala Asn Tyr Arg Lys Pro Leu Glu
          100          105          110

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<210> 6998

<211> 68

<212> PRT

<213> B.fragilis

<400> 6998

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Ile Asp Thr Thr Ala Val Ala Ser Thr Pro Arg Gly Glu His Gly Phe
1          5          10          15
Cys Gly Gly Phe Thr Thr Phe Ser Thr Leu Ala Asn Asp Ser Leu Ser
          20          25          30
Leu Leu Lys Gly Gly Phe Tyr Gly Ile Phe Thr Phe Tyr Val Phe Ile
          35          40          45
Ser Ile Leu Leu Gly Leu Leu Ala Val Leu Ala Gly Gly Tyr Leu Gly
          50          55          60
Glu Gln Phe Lys
65

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<210> 6999

<211> 217

<212> PRT

<213> B.fragilis

<400> 6999

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His Pro Gly Ile Gly Ser Gly Lys Ile Gly Phe Leu Val Glu Gly Asn
1          5          10          15
Cys His Glu Lys Lys Lys Leu Ala Asn Ile Leu Asn Pro Gly Gln Pro
          20          25          30
Asn Arg Leu Val Leu Gln Tyr Ile Phe Cys Leu Lys Asp Met Lys Pro
          35          40          45
Glu Glu Ile Asn Gly His Gln Val Gly Thr His Ser Ile Leu Val Arg
          50          55          60
Lys Trp Glu Ala Ser Ala Trp Ser Cys His Pro Glu Thr Lys Thr Gln
65          70          75          80
Gln Cys Asp Leu Asp Leu Trp Glu Gly Glu Asn Thr Tyr Arg Cys Ile
          85          90          95
Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg Asp Ile Val Glu Phe Tyr
          100          105          110
Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe Asp Asp Met Asn Asn Gly
          115          120          125
Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe Met Ala Glu Asn Thr Val
          130          135          140

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Phe Leu Leu Leu Thr Ala Leu Ile His Asn Phe Tyr Lys Thr Ile Met
 145 150 155 160
 Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu Lys Lys Thr Ser Arg Ile
 165 170 175
 Lys Ala Phe Val Phe Arg Phe Ile Ser Val Pro Ala Lys Trp Ile Met
 180 185 190
 Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr Thr Glu Asn Arg Ala Tyr
 195 200 205
 Ala Lys Pro Phe Lys Thr Glu Phe Gly
 210 215

<210> 7000

<211> 599

<212> PRT

<213> B.fragilis

<400> 7000

Leu Met Lys Pro Gly Arg Pro Leu Ser Glu Pro Ile Leu Arg Arg Lys
 1 5 10 15
 Lys Pro Gly Asn Gly Thr Ile Thr Asp Ile Asn Gly Asn Phe Ser Leu
 20 25 30
 Ser Val Gly Thr Lys Ser Thr Ile Ile Ser Tyr Ile Gly Tyr Ile
 35 40 45
 Thr Lys Glu Val Pro Val Gly Asn Asn Thr Ser Leu Thr Val Gln Leu
 50 55 60
 Ala Glu Asn Thr Lys Gln Leu Asp Glu Val Val Val Thr Ala Leu Gly
 65 70 75 80
 Ile Lys Arg Glu Glu Lys Ala Leu Gly Tyr Ala Val Gln Lys Val Asp
 85 90 95
 Gly Asp Lys Leu Ala Ala Val Lys Thr Val Asn Val Ala Thr Ser Leu
 100 105 110
 Thr Gly Lys Ile Ala Gly Leu Asn Val Lys Asn Ser Thr Glu Phe Asn
 115 120 125
 Thr Ser Pro Ser Leu Ser Leu Arg Ala Ser Ala Pro Leu Leu Val Ile
 130 135 140
 Asp Gly Val Pro Tyr Gly Asn Val Gly Leu Asn Asp Ile Ala Ala Asp
 145 150 155 160
 Asp Ile Glu Ser Val Asp Val Leu Lys Gly Ala Thr Ala Ser Ala Leu
 165 170 175
 Tyr Gly Ala Arg Gly Gly Ala Gly Ala Val Met Ile Thr Thr Lys Lys
 180 185 190
 Gly Lys Glu Glu Gly Leu Asn Val Thr Val Asn Ser Ser Thr Met Phe
 195 200 205
 Ala Ala Gly Tyr Leu Arg Lys Pro Glu Val Gln Thr Ser Tyr Ser Ser
 210 215 220
 Gly Ser Gln Gly Thr Tyr Ser Thr Gly Gly Tyr Val Trp Gly Asp Lys
 225 230 235 240
 Leu Asp Ile Gly Arg Thr Ala Leu Gln Tyr Asp Pro Tyr Thr His Glu
 245 250 255
 Trp Val Asp Met Pro Leu Val Ser Lys Gly Lys Asn Asn Leu Lys Asn
 260 265 270
 Phe Gln Glu Leu Ser Met Val Thr Asn Asn Asn Val Ser Val Ser Gln
 275 280 285
 Lys Gly Lys Tyr Gly Ser Val Arg Thr Ser Leu Thr His Val Tyr Asn
 290 295 300
 Lys Gly Gln Tyr Pro Asn Gln Lys Leu Asn Lys Ile Thr Tyr Ser Val
 305 310 315 320
 Ser Gly Asp Met Lys Trp Lys Lys Phe Ser Phe Asp Gly Gly Leu Thr
 325 330 335

Tyr Asn Lys Arg Phe Tyr Pro Asn Asp Met Gly Ala Gly Tyr Gly Gly
 340 345 350
 Ser Gly Phe Leu Tyr Asn Leu Leu Val Trp Ser Gly Ala Glu Tyr Asp
 355 360 365
 Ile Arg Asp Tyr Lys Asn Tyr Trp Ile Lys Gln Asp Glu Gln Gln Asn
 370 375 380
 Trp Met Asn Asp Val Trp Tyr Asp Asn Pro Tyr Tyr Leu Ala His Glu
 385 390 395 400
 Met Thr Ser Ser Asn Asp Tyr Asp Lys Val Asn Thr Tyr Leu Ser Gly
 405 410 415
 Lys Tyr Asp Ile Met Pro Trp Leu Asn Phe Ser Met Arg Ala Gly Ala
 420 425 430
 Asp Ala Tyr Ala Ser Arg Thr Glu Lys Lys Asn Ala Met Ser Ala Arg
 435 440 445
 Gly Gly Trp Asp Lys Asn Gly Tyr Phe Tyr Thr Ser Lys Ser Thr Gly
 450 455 460
 Phe Ser Phe Asn Gly Asp Ala Leu Leu Ser Ala Asn His Ser Phe Gly
 465 470 475 480
 Asp Phe Ala Ile Asp Gly Phe Val Gly Gly Thr Ile Tyr Tyr Tyr Tyr
 485 490 495
 Asp Asp Ala Ile Ser Ser Asn Thr Arg Asn Gly Leu Ser Ile Pro Gly
 500 505 510
 Tyr Tyr Ser Leu Lys Ala Ser Val Asp Pro Ile Ala Ser Ser Ser Ser
 515 520 525
 Tyr Lys Gln Lys Gln Val Asn Ser Ile Tyr Gly Lys Phe Ser Ala Ser
 530 535 540
 Trp Lys Ser Thr Val Phe Val Asp Val Thr Ala Arg Asn Asp Trp Ser
 545 550 555 560
 Ser Thr Leu Pro Ser Glu Thr Arg Ser Tyr Phe Tyr Pro Ala Val Ser
 565 570 575
 Gly Ser Ile Ile Met Ser Gln Leu Leu Lys Met Pro Glu Ser Ser Pro
 580 585 590
 Arg Gly Trp Lys Asp Arg Arg
 595

<210> 7001

<211> 96

<212> PRT

<213> B.fragilis

<400> 7001

Asn His Phe Tyr Tyr Tyr Tyr Asp Ser Thr Leu Ser Leu Lys Gln Lys
 1 5 10 15
 Asn Ile Gln Glu Asp Ile Gly Val Ser Thr Cys Met Lys Val His Arg
 20 25 30
 Gln Phe Val Trp Arg Gln Thr Val Arg Gln Ile Glu Phe Phe Lys Ser
 35 40 45
 Lys Ser Leu Gln Ile Tyr Asp Asn Leu Leu Lys Leu Pro Ile Phe Arg
 50 55 60
 Glu Ala Glu Tyr Ile Phe Ala Leu Glu Lys Asn Thr Phe Val Tyr Glu
 65 70 75 80
 Thr Ile Ser Asn Asn Val Val Cys Leu Cys Gln His Gly Ile Cys Gly
 85 90 95

<210> 7002

<211> 137

<212> PRT

<213> B.fragilis

<400> 7002

Asn Phe Leu Asn Gln Asn His Tyr Lys Ser Met Thr Ile Tyr Leu Asn
 1 5 10 15
 Phe Gln Phe Phe Gly Arg Gln Asn Thr Phe Ser Leu Leu Lys Lys Ile
 20 25 30
 Pro Leu Cys Met Lys Leu Ser Ala Ile Met Leu Phe Val Phe Ala Ser
 35 40 45
 Met Ala Phe Ala Ala Lys Gly Tyr Ser Gln Ser Val Arg Val Thr Leu
 50 55 60
 Asn Val Asn Asn Ser Ser Leu Gln Lys Val Leu Asp Glu Ile Glu Lys
 65 70 75 80
 Gln Ser Glu Phe His Phe Phe Tyr Asn Asn Lys Gln Val Asp Ile Ser
 85 90 95
 Arg Asn Val Thr Ile Lys Ser Asn Gln Lys Glu Ile Ser Gln Val Leu
 100 105 110
 Asn Gln Leu Phe Ala Gly Thr Asn Ile Gly Tyr Lys Ile Leu Glu Asn
 115 120 125
 Ser Ile Ile Leu Cys Pro Lys His Ile
 130 135

<210> 7003

<211> 406

<212> PRT

<213> B.fragilis

<400> 7003

Glu Thr Met Leu Arg Met Arg Leu Arg Phe Pro Ala Glu Pro Gly Arg
 1 5 10 15
 Thr Glu Phe His Arg Leu Leu Cys Ala Arg Cys Arg Tyr Thr Cys Arg
 20 25 30
 Pro Ser Phe Trp Ala Lys Ile Ile Leu Phe Ser Lys Lys Ile Arg Phe
 35 40 45
 Leu Val Arg Arg Phe Leu Phe Trp Phe Val Leu Ser Ile Lys Ala Arg
 50 55 60
 Ile Met Asp Glu Ser Cys Tyr Ile Asn Glu Ser Val Leu Leu Asn Tyr
 65 70 75 80
 Phe Ala Gly Glu Leu Pro Ala Asp Arg Arg Lys Glu Val Glu Glu Trp
 85 90 95
 Ile Ala Ala Ser Glu Asp Asn Glu Lys Met Ala Arg Asp Ile Phe Arg
 100 105 110
 Leu Tyr Arg Ala Ala Asp Thr Leu Asp Tyr Met Asn Arg Val Asp Ala
 115 120 125
 Ser Ala Ala Leu Gln Gln Val Lys Gly Arg Ile His Lys His Arg His
 130 135 140
 Arg Ile Ser Trp Met Val Trp Gly Gln Arg Ile Ala Ala Cys Met Ala
 145 150 155 160
 Leu Pro Leu Leu Ala Thr Thr Leu Tyr Leu Ile Leu Lys Asn Pro Pro
 165 170 175
 Gln Glu Tyr Val Glu Ile Arg Thr Asn Pro Gly Met Val Ala Glu Ala
 180 185 190
 Asn Leu Pro Asp Gly Thr Lys Val Trp Leu Asn Ser Gly Ser Ser Leu
 195 200 205
 Lys His Pro Val Lys Phe Thr Gly Asp Thr Arg Thr Val Glu Leu Asp
 210 215 220
 Gly Glu Ala Tyr Phe Ser Val Arg Lys Asp Arg Ser Lys Arg Phe Val
 225 230 235 240
 Val Asn Thr Pro Phe Asn Ile Gln Thr Glu Val Leu Gly Thr Glu Phe
 245 250 255
 Asn Met Glu Ala Tyr Arg Thr Asp Ser Val Val Arg Thr Thr Leu Val

$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$

<400> 7004

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<210> 7005
<211> 212
<212> PRT
<213> B.fragilis
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<400> 7005

Pro	Lys	Asn	Val	Phe	Phe	Leu	Lys	Ile	Ile	Leu	Phe	Leu	Pro	Lys	Thr
1				5					10					15	
Lys	Val	Tyr	Met	Tyr	Asn	Asp	Thr	Ser	Arg	Thr	Val	Ser	Asp	Glu	Thr
			20					25					30		
Leu	Phe	Phe	Gln	Val	Gln	Gln	Gly	Asn	Glu	Gly	Ala	Phe	Glu	Ala	Leu
			35				40					45			
Phe	Leu	Arg	His	Tyr	Pro	Ala	Leu	Cys	Ala	Tyr	Ala	Arg	Leu	Phe	Val
	50					55				60					
Glu	Pro	Asp	Asp	Gly	Gln	Glu	Ile	Val	Ser	Asp	Val	Met	Val	Trp	Leu
65				70					75					80	
Trp	Glu	Asn	Lys	Glu	Met	Gln	Ala	Phe	Glu	Ser	Ser	Leu	Lys	Ser	Tyr
			85						90					95	
Leu	Phe	Lys	Ala	Val	Lys	Asn	Arg	Cys	Leu	Thr	Leu	Ile	Asn	Arg	Asn
			100					105					110		

Glu Val Lys Gln Arg Ile Glu Lys Met Ile Phe Asp Asn Leu Gln Ser
 115 120 125
 Gln Tyr Asp Asp Pro Asp Phe Tyr Ala Ile Gln Glu Leu Thr Glu Lys
 130 135 140
 Ile Glu Glu Ala Leu Ala Arg Leu Pro Glu Asn Val Arg Glu Ala Phe
 145 150 155 160
 Glu Leu Asn Arg Phe Gln Asn Leu Thr Tyr Asn Glu Ile Ala Glu Arg
 165 170 175
 Leu Gly Val Ser Pro Lys Thr Ile Asp Tyr Arg Ile Gln Gln Ala Leu
 180 185 190
 Lys Gln Leu Arg Ile Asp Leu Lys Glu Tyr Leu Pro Leu Leu Leu Pro
 195 200 205
 Phe Leu Leu His
 210

<210> 7006
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 7006
 Ser Phe Gln Pro Arg Gly Glu Asp His Tyr Trp Ile Ser Ser Asn Ala
 1 5 10 15
 Gly Leu Ile Thr Ile Asn Pro Ile Thr Lys Gln His Phe Arg Gln Phe
 20 25 30
 Thr Val Asn Asp Gly Leu Gln Gly Asn Gln Phe Thr Ala Gln Ser Ser
 35 40 45
 Leu Lys Thr Ala Ser Gly Lys Leu Tyr Phe Gly Gly Ile Ser Gly Phe
 50 55 60
 Asn Ser Val
 65

<210> 7007
 <211> 129
 <212> PRT
 <213> B.fragilis

<400> 7007
 Leu Phe Arg Leu Cys Cys Thr Phe Met Gln Met Lys Lys Ser Asn Ile
 1 5 10 15
 Tyr Ile Gly Glu Ile Ile Lys Asn Val Met Ser Glu Arg Gln Val Thr
 20 25 30
 Lys Ala Glu Leu Ala Arg Arg Leu Asp Val Lys Pro Gln Ser Val Asp
 35 40 45
 Tyr Leu Leu Thr Arg Lys Ser Ile Asp Thr Asp Thr Leu Tyr Asn Ile
 50 55 60
 Ser Ile Ala Leu Asp Tyr Asp Phe Ser Leu Leu Tyr Ser Ile Lys Arg
 65 70 75 80
 Glu Gln Arg Asn Ser Asp Asn Glu Gly Ile Arg Tyr Lys Leu Gly Asn
 85 90 95
 Ala Lys Ile Met Val Glu Ile Glu Leu Gln Gln Asp Glu Ile Ile Lys
 100 105 110
 Leu Asn Leu Lys Lys Lys Ile Ala Glu Leu Leu Asp Gly Gly Ala Asn
 115 120 125
 Lys

<210> 7008
 <211> 77

<212> PRT

<213> B.fragilis

<400> 7008

His	Arg	Lys	Thr	Ser	Pro	Ile	Leu	Pro	Thr	Lys	Ala	Arg	Pro	Tyr	Asp
1				5					10					15	
Phe	Asn	Thr	Ala	Asp	Lys	Leu	Asn	Thr	Leu	Leu	Ile	Asn	Ala	Leu	Val
			20					25					30		
Ser	Thr	Gly	Glu	Leu	Lys	Glu	Ile	Glu	Glu	Tyr	Asp	Val	Asp	Phe	Asp
		35					40					45			
His	Gln	Phe	Leu	Glu	Thr	Glu	Lys	Tyr	Asp	Gly	Lys	Thr	Asp	Leu	Gln
	50					55					60				
Lys	Val	Pro	Arg	Leu	Gln	Ala	Trp	Arg	Ile	Cys	Tyr	Arg			
65					70					75					

<210> 7009

<211> 115

<212> PRT

<213> B.fragilis

<400> 7009

Tyr	Asp	Met	Ala	Lys	Ile	Gln	Ile	Lys	Ser	Glu	Lys	Leu	Thr	Pro	Phe
1				5					10					15	
Gly	Gly	Ile	Phe	Ser	Ile	Met	Glu	Lys	Phe	Asp	Ser	Met	Leu	Ser	Pro
			20					25					30		
Val	Ile	Asp	Ser	Thr	Leu	Gly	Gln	Arg	Cys	Ser	Ser	Ile	Phe	Gly	Tyr
		35					40					45			
Gln	Phe	Ser	Glu	Ile	Val	Arg	Ser	Leu	Met	Ser	Val	Tyr	Phe	Cys	Gly
	50					55					60				
Gly	Ser	Cys	Val	Glu	Asp	Val	Thr	Ser	Gln	Leu	Met	Arg	His	Leu	Ser
65					70					75				80	
Tyr	His	Pro	Thr	Leu	Arg	Thr	Cys	Ser	Ser	Asp	Thr	Ile	Leu	Arg	Ala
				85					90					95	
Ile	Lys	Glu	Leu	Thr	Gln	Glu	Asn	Ile	Ser	Tyr	Thr	Ser	Asp	Gln	Gly
			100				105							110	
Lys	Thr	Leu													
		115													

<210> 7010

<211> 83

<212> PRT

<213> B.fragilis

<400> 7010

Val	Pro	Glu	Gln	Gln	Lys	Val	Ala	Gln	Asp	Phe	Ala	Met	Ser	Glu	Phe
1				5					10					15	
Ser	Leu	Ile	Leu	Val	Leu	Gln	Lys	Glu	Asn	Lys	Gln	Asn	Ser	Asn	Met
			20					25					30		
Thr	Trp	Gln	Lys	Tyr	Lys	Leu	Asn	Leu	Arg	Asn	Ser	His	Leu	Leu	Glu
		35					40					45			
Glu	Phe	Phe	Gln	Ser	Trp	Arg	Asn	Leu	Thr	Pro	Cys	Phe	His	Pro	Leu
	50					55					60				
Ser	Thr	Gln	His	Trp	Val	Arg	Asp	Ala	Ala	Val	Ser	Ser	Asp	Ile	Ser
65					70					75				80	
Ser	Ala	Arg													

<210> 7011

<211> 725

<212> PRT

<213> B.fragilis

<400> 7011

Phe	Leu	Leu	Asn	His	Ile	Met	Lys	Asn	Met	Lys	Lys	Leu	Thr	Phe	Lys
1			5					10						15	
Leu	Ala	Cys	Phe	Leu	Ser	Leu	Leu	Val	Ser	Ser	Val	Ala	Met	Ala	
		20					25					30			
Glu	Ser	Ile	Thr	Ser	Pro	Asn	Gly	Leu	Leu	Lys	Leu	Asn	Val	Ser	Val
		35					40					45			
Asn	Glu	Lys	Gly	Glu	Pro	Val	Tyr	Glu	Leu	Ser	Tyr	Lys	Gly	Lys	Glu
		50				55					60				
Val	Ile	Lys	Pro	Ser	Lys	Leu	Gly	Leu	Glu	Leu	Lys	Asp	Asp	Pro	Gly
65					70					75				80	
Leu	Met	Asp	Gly	Phe	Thr	Leu	Ser	Asp	Ala	Lys	Thr	Ser	Ser	Phe	Asp
				85					90					95	
Glu	Thr	Trp	Glu	Pro	Val	Trp	Gly	Glu	Val	Lys	Gln	Ile	Arg	Asn	Asn
			100					105					110		
Tyr	Asn	Glu	Leu	Ala	Ile	Thr	Leu	Asp	Gln	Lys	Ala	Gln	Asp	Arg	Lys
		115					120					125			
Met	Val	Ile	Arg	Phe	Arg	Leu	Tyr	Asn	Asp	Gly	Leu	Gly	Phe	Arg	Tyr
		130				135					140				
Glu	Phe	Pro	Gln	Gln	Lys	Asn	Leu	Asn	Tyr	Phe	Val	Ile	Lys	Glu	Glu
145					150					155				160	
His	Ser	Gln	Phe	Ala	Met	Ala	Gly	Asp	His	Thr	Ala	Phe	Trp	Ile	Pro
			165						170					175	
Gly	Asp	Tyr	Asp	Thr	Gln	Glu	Tyr	Asp	Tyr	Thr	Arg	Ser	Lys	Leu	Ser
			180					185					190		
Glu	Ile	Arg	Gly	Leu	Met	Lys	Thr	Ala	Val	Thr	Pro	Asn	Ala	Ser	Gln
		195					200					205			
Thr	Pro	Phe	Ser	Pro	Thr	Gly	Val	Gln	Thr	Ala	Leu	Gln	Met	Lys	Thr
		210				215					220				
Asp	Asp	Gly	Leu	Tyr	Ile	Asn	Leu	His	Glu	Ala	Ala	Leu	Val	Asp	Tyr
225					230					235				240	
Ser	Cys	Met	His	Leu	Asn	Leu	Asp	Asp	Lys	Asn	Phe	Val	Phe	Glu	Ser
			245						250					255	
Trp	Leu	Thr	Pro	Asp	Ala	Gln	Gly	Thr	Lys	Gly	Tyr	Met	Gln	Thr	Pro
			260					265					270		
Cys	His	Ser	Pro	Trp	Arg	Thr	Val	Met	Val	Ser	Asp	Asp	Ala	Arg	Asp
			275				280					285			
Ile	Leu	Ala	Ser	Lys	Leu	Thr	Leu	Asn	Leu	Asn	Glu	Pro	Cys	Lys	Leu
			290			295					300				
Glu	Asp	Thr	Ser	Trp	Ile	Lys	Pro	Val	Lys	Tyr	Val	Gly	Val	Trp	Trp
305					310					315				320	
Glu	Met	Ile	Thr	Gly	Lys	Ser	Thr	Trp	Ala	Tyr	Thr	Asp	Asp	Val	Tyr
				325					330					335	
Ser	Val	Lys	Leu	Gly	Glu	Thr	Asp	Tyr	Thr	Lys	Thr	Lys	Pro	Asn	Gly
			340					345					350		
Arg	His	Gly	Ala	Asn	Asn	Glu	Asn	Val	Lys	Arg	Tyr	Ile	Asp	Phe	Ala
		355				360						365			
Ala	Glu	His	Gly	Phe	Asp	Gln	Val	Leu	Val	Glu	Gly	Trp	Asn	Glu	Gly
		370				375					380				
Trp	Glu	Asp	Trp	Phe	Gly	Lys	Ser	Lys	Asp	Tyr	Val	Phe	Asp	Phe	Val
385					390					395				400	
Thr	Pro	Tyr	Pro	Asp	Phe	Asp	Val	Lys	Met	Leu	Asn	Glu	Tyr	Ala	Arg
			405						410					415	
Ser	Lys	Gly	Val	Lys	Leu	Met	Met	His	His	Glu	Thr	Ser	Ala	Ser	Val
			420					425					430		
Arg	Asn	Tyr	Glu	Arg	His	Met	Asp	Glu	Ala	Tyr	Gln	Phe	Met	Glu	Asp

435	440	445
Asn Gly Tyr Asn Ala Val Lys Ser Gly Tyr Val Gly Asn Ile Ile Pro		
450	455	460
Arg Gly Glu His His Tyr Gly Gln Trp Leu Asn Asn His Tyr Leu Tyr		
465	470	475
Ala Val Lys Lys Ala Ala Asp His Lys Ile Met Val Asn Ala His Glu		480
	485	490
Ala Val Arg Pro Thr Gly Leu Cys Arg Thr Tyr Pro Asn Leu Ile Gly		495
	500	505
Asn Glu Ser Ala Arg Gly Thr Glu Tyr Glu Ala Phe Gly Gly Asn Lys		510
	515	520
Pro Phe His Thr Thr Leu Leu Pro Phe Thr Arg Leu Ile Gly Gly Pro		525
	530	535
Met Asp Tyr Thr Pro Gly Ile Phe Asp Thr Gln Leu Ser Phe Leu Ser		540
545	550	555
Gly Glu His Ser Phe Val His Thr Thr Leu Ala Lys Gln Leu Ala Leu		560
	565	570
Tyr Val Thr Leu Tyr Ser Pro Leu Gln Met Ala Ala Asp Leu Pro Glu		575
	580	585
Ser Tyr Glu Arg Tyr Met Asp Ala Phe Gln Phe Ile Lys Asp Val Ala		590
	595	600
Val Asp Trp Asp Glu Ser Lys Tyr Ile Glu Ala Glu Pro Gly Glu Tyr		605
	610	615
Ile Thr Val Ala Arg Lys Ala Lys Asn Thr Asn Asn Trp Phe Val Gly		620
625	630	635
Gly Ile Thr Gly Glu Asn Ala Arg Thr Ser Thr Phe Val Leu Asp Phe		640
	645	650
Leu Glu Pro Gly Lys Gln Tyr Val Ala Thr Leu Tyr Ala Asp Gly Lys		655
	660	665
Asp Ala Asp Tyr Glu Lys Asn Pro Thr Ser Tyr Gln Ile Lys Lys Gly		670
	675	680
Leu Val Thr Tyr Lys Thr Lys Ile Ser Thr Asp Leu Ala Arg Ser Gly		685
	690	695
Gly Phe Ala Ile Ser Leu Ile Glu Ala Thr Pro Ala Asp Lys Lys Ala		700
705	710	715
Leu Lys Lys Trp Lys		720
	725	

<210> 7012

<211> 113

<212> PRT

<213> B.fragilis

<400> 7012

Arg Lys Leu Arg Asn Thr Met Leu Thr Leu Thr Ile Ser Ser Leu Lys	
1	5
Arg Arg Ser Met Met Ala Lys Pro Thr Tyr Lys Lys Phe Leu Gly Tyr	10
	15
	20
Arg Pro Gly Val Tyr Val Ile Gly Asp Lys Asn Val Tyr Ile Glu Asn	25
	30
	35
Ser Glu Gly Asn Pro Ile Val Arg Phe His Ser Ala Asp Thr His Lys	40
	45
	50
Lys Ile Phe Ala Leu Leu Glu Ser Gln Asn Asn Pro Val Lys Arg Phe	55
	60
65	65
Arg Gly Lys Arg Gly Phe Pro Leu Gln Arg Lys Ile Ser Val Lys Lys	70
	75
	80
	85
Arg Lys Leu Cys Lys Leu Phe Tyr Ile Pro Ala Asn Pro Arg His Leu	90
	95
	100
	105
	110
Val	

<210> 7013
 <211> 628
 <212> PRT
 <213> B.fragilis

<400> 7013

Ile	Thr	Pro	Ser	Phe	Tyr	Phe	Met	Ala	Ile	Thr	Ile	Ile	Ile	Leu	Val
1				5					10					15	
Leu	Ser	Ala	Val	Phe	Phe	Met	Ser	Gly	Lys	Val	Arg	Ser	Asp	Leu	Val
			20					25					30		
Ala	Leu	Cys	Ala	Leu	Val	Leu	Leu	Ile	Leu	Phe	Asn	Ile	Leu	Thr	Pro
		35					40					45			
Glu	Glu	Ala	Leu	Ser	Gly	Phe	Ser	Asn	Ser	Val	Val	Ile	Met	Met	Val
	50					55					60				
Gly	Leu	Phe	Val	Val	Gly	Gly	Ala	Ile	Phe	Gln	Thr	Gly	Leu	Ala	Lys
65					70					75				80	
Met	Ile	Ser	Ser	Arg	Ile	Leu	Lys	Phe	Ala	Gly	Thr	Ser	Glu	Leu	Lys
				85					90					95	
Leu	Phe	Ile	Leu	Ile	Ile	Leu	Val	Thr	Ala	Ala	Ile	Gly	Ala	Phe	Val
			100					105					110		
Ser	Asn	Thr	Gly	Thr	Val	Ala	Leu	Met	Leu	Pro	Ile	Val	Val	Ser	Met
	115						120					125			
Ala	Met	Ser	Ala	Asn	Ile	Asn	Val	Ser	Arg	Leu	Leu	Met	Pro	Leu	Ala
	130					135					140				
Phe	Ala	Ser	Ser	Met	Gly	Gly	Met	Met	Thr	Leu	Ile	Gly	Thr	Pro	Pro
145					150					155				160	
Asn	Leu	Val	Ile	Gln	Asn	Ala	Leu	Ile	Glu	Ala	Gly	Tyr	Glu	Arg	Leu
				165					170					175	
Ser	Phe	Phe	Thr	Phe	Thr	Pro	Val	Gly	Leu	Val	Cys	Val	Thr	Val	Gly
			180					185					190		
Leu	Ile	Val	Leu	Ile	Pro	Leu	Ser	Lys	Ile	Phe	Leu	Thr	Lys	Lys	Ser
	195					200						205			
Asp	Lys	Glu	Ala	Arg	Gly	Lys	Arg	Lys	Asn	Lys	Ser	Leu	Gln	Glu	Leu
	210					215					220				
Ala	Gly	Glu	Tyr	Gln	Leu	Ser	Gln	Asn	Leu	Tyr	Arg	Val	Glu	Val	Glu
225					230					235				240	
Glu	Ser	Ser	Gly	Phe	Val	Gly	Lys	Thr	Ile	Gln	Glu	Leu	Gly	Ile	Pro
			245						250					255	
Gln	Arg	Tyr	His	Val	Thr	Ile	Leu	Glu	Val	Arg	Arg	Arg	Ser	Val	Ser
			260					265					270		
Ser	Arg	His	Phe	Phe	Lys	Thr	Lys	Lys	Gln	Glu	Met	Ala	Glu	Ala	Gly
		275					280					285			
Thr	Leu	Ile	Glu	Ala	Glu	Asp	Ile	Leu	Tyr	Val	Leu	Gly	Glu	Phe	Glu
	290					295					300				
Asn	Val	Lys	Arg	Phe	Ala	Gly	Glu	Asn	Arg	Leu	Ser	Leu	Leu	Asp	Thr
305					310					315				320	
His	Lys	Thr	Glu	Gly	Ser	Leu	His	Asp	Thr	Asp	Glu	Gly	Phe	Asp	Phe
			325						330					335	
Gln	Glu	Ile	Gly	Ile	Ala	Glu	Ile	Leu	Leu	Leu	Pro	Thr	Ala	Asn	Leu
			340					345					350		
Ile	Asn	Lys	Pro	Val	Lys	Ala	Ser	Gly	Phe	Arg	Glu	Asn	Tyr	Ser	Ile
	355						360					365			
Asn	Ile	Leu	Gly	Ile	Gln	Arg	Lys	Arg	Asp	Tyr	Leu	Leu	Lys	Asn	Leu
	370					375					380				
Lys	Asp	Glu	Lys	Met	His	Ser	Gly	Asp	Ile	Leu	Leu	Val	Gln	Gly	Ser
385					390					395				400	
Trp	Ala	Asn	Ile	Ala	Arg	Leu	Gly	Glu	Asp	Gln	Ser	Gln	Trp	Val	Val

405 410 415
 Leu Gly Gln Pro Leu Ala Glu Ala Ala Lys Val Thr Leu Asn His Lys
 420 425 430
 Ala Pro Val Ala Ala Leu Ile Met Leu Gly Met Ile Val Thr Met Met
 435 440 445
 Phe Asp Phe Ile Pro Val Ala Pro Val Thr Ala Val Ile Ile Ala Ala
 450 455 460
 Leu Leu Met Val Leu Thr Gly Cys Phe Arg Asn Val Glu Glu Ala Tyr
 465 470 475 480
 Lys Thr Ile Asn Trp Glu Ser Ile Val Leu Ile Ala Gly Met Leu Pro
 485 490 495
 Met Ser Leu Ala Leu Glu Lys Thr Gly Ala Ser Glu Val Val Ser Gln
 500 505 510
 Ser Leu Val Asn Gly Leu Gly Ala Tyr Gly Pro Phe Ala Leu Leu Ala
 515 520 525
 Gly Ile Tyr Phe Thr Thr Ser Leu Met Thr Met Phe Ile Ser Asn Thr
 530 535 540
 Ala Thr Ala Val Leu Leu Ala Pro Ile Ala Leu His Ser Ala Val Gln
 545 550 555 560
 Leu Gly Leu Ser Pro Tyr Pro Phe Leu Phe Ala Val Thr Val Ala Ala
 565 570 575
 Ser Met Cys Phe Ala Ser Pro Phe Ser Thr Pro Pro Asn Ala Leu Val
 580 585 590
 Met Pro Ala Gly Arg Tyr Thr Phe Met Asp Tyr Val Lys Val Gly Leu
 595 600 605
 Pro Leu Gln Ile Ile Met Gly Val Val Met Val Phe Val Leu Pro Leu
 610 615 620
 Leu Phe Pro Phe
 625

<210> 7014
 <211> 355
 <212> PRT
 <213> B.fragilis

<400> 7014
 Gln Lys Gly Leu Lys Asn Ile Glu Thr Met Lys Lys Glu Asn Asp Glu
 1 5 10 15
 Ile Thr Asp Leu Phe Arg Ser Arg Leu Gly Asn Ala Glu Met Thr Val
 20 25 30
 Arg Asp Gly Phe Trp Glu Glu Leu Asn Ser Glu Met Met Val Arg Ser
 35 40 45
 His His Arg Lys Val Val Phe Phe Arg Val Ala Ala Ala Ala Ser Val
 50 55 60
 Leu Leu Val Leu Ala Ala Ser Ser Ala Ala Phe Trp Phe Phe Ser Pro
 65 70 75 80
 Lys Ala Glu Ile Glu Glu Ala Phe Thr Gln Val Ala Val Val Ser Gly
 85 90 95
 Asn Thr Thr His Leu Asp Gly Asp Val Val Lys Gln Asp Phe Thr Pro
 100 105 110
 Met Arg Ser Glu Pro Val Leu Gly Lys Pro Ala Pro Lys Arg Ser Gly
 115 120 125
 Val Leu Ala Gln Ser Ser Gly Glu Glu Asp Asp Ser Val Ser Val Thr
 130 135 140
 Val Ser Met Ser Phe Ser Ser Ser Thr Thr Arg Arg Arg Gln
 145 150 155 160
 Asn Asn His Pro Asp Lys Ser Tyr Trp Gln Ala Gly Gly Glu Gly Gly
 165 170 175
 Ala Leu Ala Ser Ser Ala Asp Gly Pro Arg Pro Asp Asp His Thr Val

180	185	190
Val Ala Asp Lys Ser Arg Thr	Trp Ala Val Lys Ala Ala	Val Gly Thr
195	200	205
Ala Leu Pro Ala Ala Asn Gly	Lys Tyr Lys Met Pro Val	Thr Ala Gly
210	215	220
Leu Thr Val Glu Lys Lys Ile Asn Lys His	Leu Ala Val Glu Thr Gly	
225	230	235
Leu Leu Tyr Ser Asn Leu Arg Ala Glu Gln Asn Leu His Tyr	Leu Gly	
245	250	255
Ile Pro Val Lys Leu Asn Met Thr	Leu Ala Glu Thr Pro Lys Phe Asp	
260	265	270
Leu Tyr Ala Ser Val Gly Gly Val Ala Asp Lys Cys Ile Ala Gly Ala		
275	280	285
Pro Asp Asn Ser Phe Lys Asn Glu Pro Val Gln Leu Ala Leu Thr Ala		
290	295	300
Gly Val Gly Met Asn Tyr Lys Asn Asn Asp Lys Leu Ala Leu Phe Ala		
305	310	315
Glu Pro Gly Val Thr His His Phe Lys Thr Asn Ser Lys Leu Glu Thr		
325	330	335
Val Arg Ser Ala Lys Pro Thr Asn Phe Asn Leu Asp Cys Gly Leu Arg		
340	345	350
Met Thr Tyr		
355		

<210> 7015
 <211> 345
 <212> PRT
 <213> B.fragilis

<400> 7015

Cys Arg Gln Ser Arg His Arg Ala Met Met Lys Arg His Asn Ile Leu	
1 5 10 15	
Thr Val Leu Ala Val Leu Leu Leu Thr Phe Ala Ala Cys Asp Lys Asn	
20 25 30	
Ser Ala Pro Gly Phe Ser Phe Thr Thr Asp Ser Ile Leu Thr Leu Thr	
35 40 45	
Phe Asp Lys Glu Leu Asp Ala Phe Val Gly Val Gly Thr Gln Asn	
50 55 60	
Tyr Asn Pro Val Gly Met Arg Arg Ser Gly Asp Thr Leu Phe Ile Ala	
65 70 75 80	
Asn Arg Ala Glu Gly Ser Asp Gly Val Trp Val Val Arg Ala Ser Thr	
85 90 95	
Gly Glu Leu Leu Tyr Ser Leu Thr Gly Trp Thr Tyr Asn Gly Lys Asn	
100 105 110	
Glu Lys Phe Asp Asn Gln Val Met Asp Val Ala Val Ser Ser Asp Tyr	
115 120 125	
Ile Phe Val Val Asn Arg Ser Ser Arg Ile Asp Leu Phe Arg Arg Asn	
130 135 140	
Asp Tyr Ser Tyr Val Thr Thr Ile Gly Arg Thr Gly Trp Gln Ser Ser	
145 150 155 160	
Ser Leu Leu Gln Cys Glu Ala Ala Glu Val Ala Gly Asp Lys Leu Phe	
165 170 175	
Ile Arg Asp Lys Gln Lys Ile Lys Val Gln Ile Ser Asp Cys Thr	
180 185 190	
Pro Glu Asn Arg Phe Lys Val Pro Val Phe Ala Gln Asn Thr Asp Ser	
195 200 205	
Thr Ser Ser Asn Asn Gly Phe Asn Leu Glu Ser Val Ala Arg His Glu	
210 215 220	
Gly Leu Ile Tyr Val Ser Asp Tyr Glu Thr Ser Arg Ile Leu Val Ile	